

TEAC

SERVICE MANUAL

AS-M50

AS-M30

Stereo Integrated Amplifier



TEAC CORPORATION

51032310

1. GENERAL DESCRIPTION

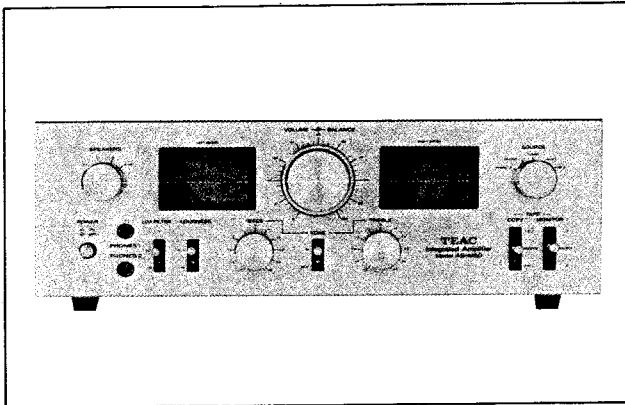
This service manual contains complete alignment procedures for the AS-M50 and AS-M30 Stereo Integrated Amplifiers. Both models are very similar and most of the information applies to both models unless otherwise noted.

We have tried to keep this information as concise and yet as complete as possible. If you have any questions concerning any of the procedures or find that the information is incomplete or difficult to understand, please feel free to contact the nearest TEAC Factory Service Department or write directly to a TEAC office.

These addresses are printed on the back cover.

NOTE: When ordering replacement parts please refer to the PARTS LIST which is printed together with this manual.

AS-M50



AS-M30

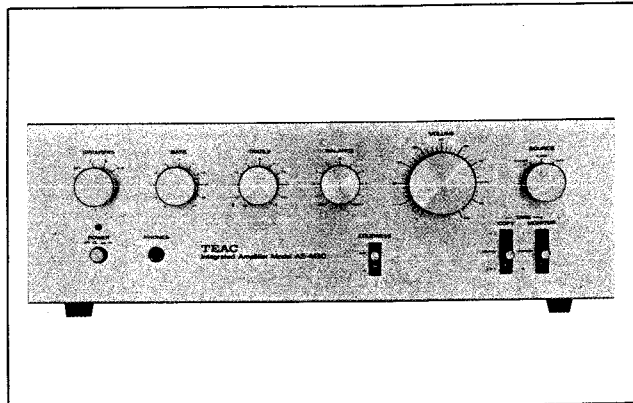


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2. SPECIFICATIONS

AS-M50

Rated Output Power

50W continuous per channel, at 8 ohms from 20 to 20,000Hz with no more than 0.1% THD, both channels driven.

Total Harmonic Distortion

0.1% at rated power

0.05% at 1W/1kHz

Input Sensitivity/Impedance

Phono 1, 2: 2.5mV/47k ohms

Tuner: 150mV/47k ohms

Aux 1, 2: 150mV/47k ohms

Tape 1, 2: 150mV/47k ohms

Phono Maximum Input Level

200mV

Output Level/Impedance

Tape 1, 2: 150mV/47k ohms

Headphones 1, 2: 8 ohms

Speakers: A, B, A + B, OFF/8 ohms or more

Frequency Response

20 – 20,000Hz +0/–1 dB

Tone Control

Bass: ±9dB/100Hz

Treble: ±9dB/10kHz

Loudness Control

+8dB/100Hz, +4dB/10kHz

Low Filter

–6dB/15Hz

Signal-to-Noise Ratio (Weighted, A Curve)

Phono: 80dB

Tuner, Aux, Tape: 95dB

Power Requirement

100/117/220/240V AC, 50/60Hz

(General Export Model)

220V AC, 50Hz (Europe Model)

240V AC, 50Hz (U.K./Australia Model)

Power Consumption

215W at rated power output

28W at no signal

Dimensions (WHD)

410 x 145 x 300mm

(16-1/8" x 5-11/16" x 11-7/16")

Weight

9.0 kg (19-13/16 lbs) net

AS-M30

Rated Output Power

30W continuous per channel, at 8 ohms from 20 to 20,000Hz with no more than 0.1% THD, both channels driven.

Total Harmonic Distortion

0.1% at rated power

0.05% at 1W/1kHz

Input Sensitivity/Impedance

Phono: 2.5mV/47k ohms

Tuner: 150mV/47k ohms

Aux: 150mV/47k ohms

Tape 1, 2: 150mV/47k ohms

Phono Maximum Input Level

150mV

Output Level/Impedance

Tape 1, 2: 150mV/47k ohms

Headphones: 8 ohms

Speakers: A, B, A + B, OFF/8 ohms or more

Frequency Response

20 – 20,000Hz ±1dB

Tone Control

Bass: ±9dB/100Hz

Treble: ±9dB/10kHz

Loudness Control

+8dB/100Hz, +4dB/10kHz

Signal-to-Noise Ratio (Weighted, A Curve)

Phono: 70dB

Tuner, Aux, Tape: 90dB

Power Requirement

100/117/220/240V AC, 50/60Hz

(General Export Model)

220V AC, 50Hz (Europe Model)

240V AC, 50Hz (U.K./Australia Model)

Power Consumption

115W at rated power output

13W at no signal

Dimensions (WHD)

410 x 145 x 300mm

(16-1/8" x 5-11/16" x 11-7/16")

Weight

7.0 kg (15-3/8 lbs) net

NOTE: • Changes in specifications and features may be made without notice.

- Value of "dB" in the Data refers to 0 dB=1V, except where specified. If a Test Set or AC voltmeter calibrated to 0 dB=0.775V is to be used, appropriate compensation should be made.

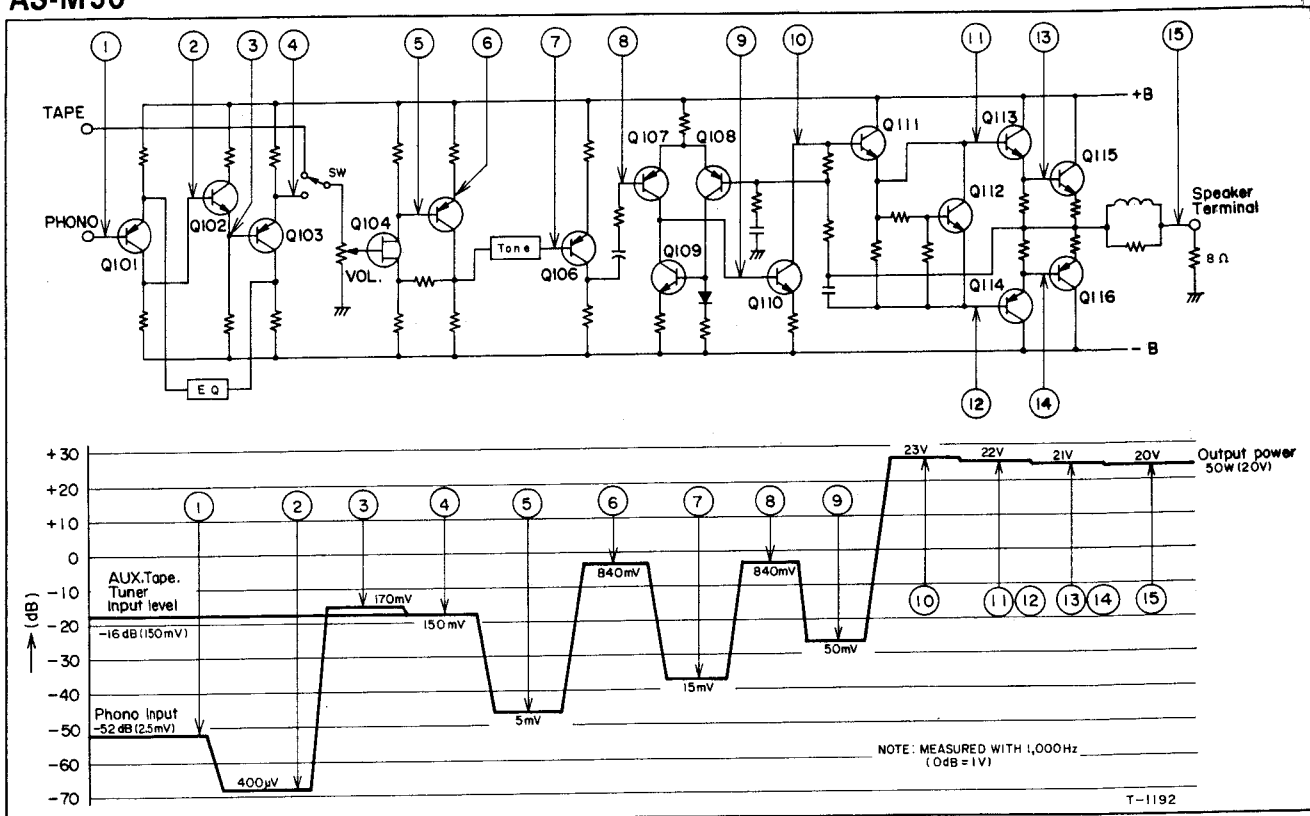
— REQUIRED EQUIPMENT —

- AC VTVM
- Volt-ohm multimeter (or DC Voltmeter)
- Audio Generator
- Oscilloscope
- Dummy load resistor 8Ω/50W

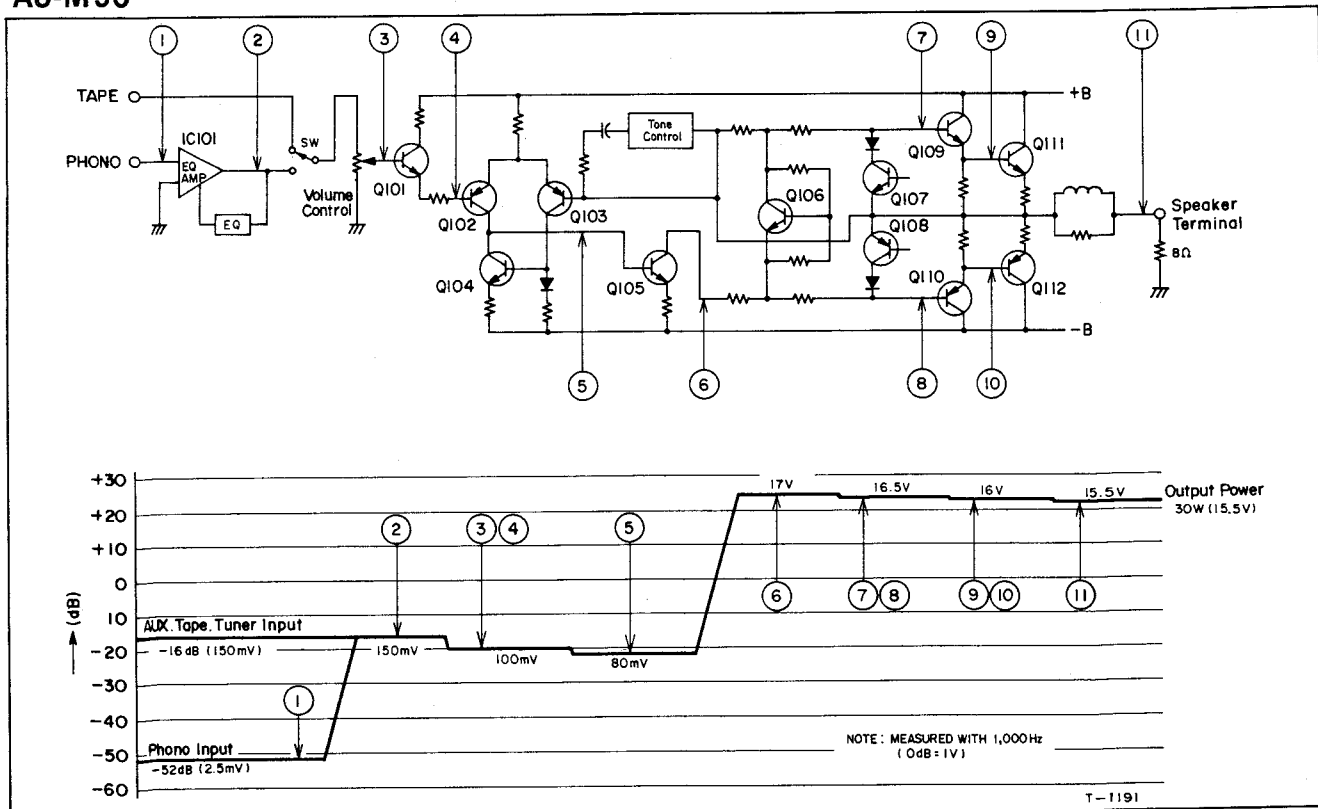
3. LEVEL DIAGRAMS

— With Voltage Indications —

AS-M50



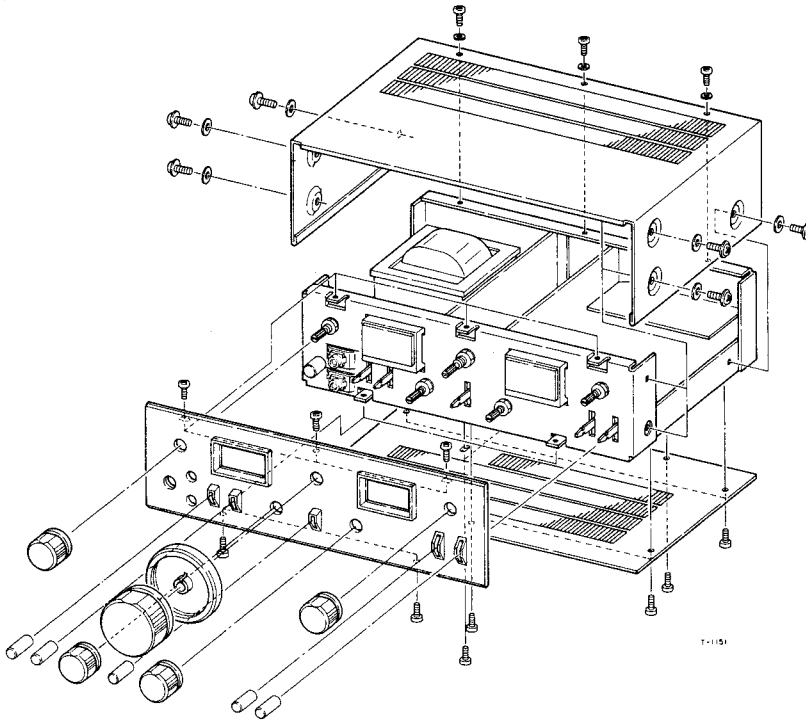
AS-M30



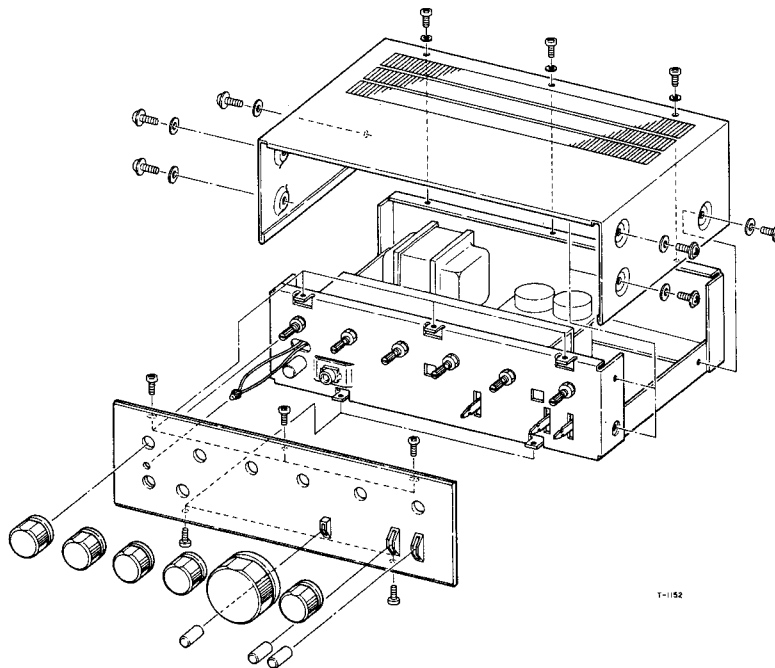
4. DISASSEMBLY

FRONT PANEL, BONNET AND BOTTOM PLATE

AS-M50

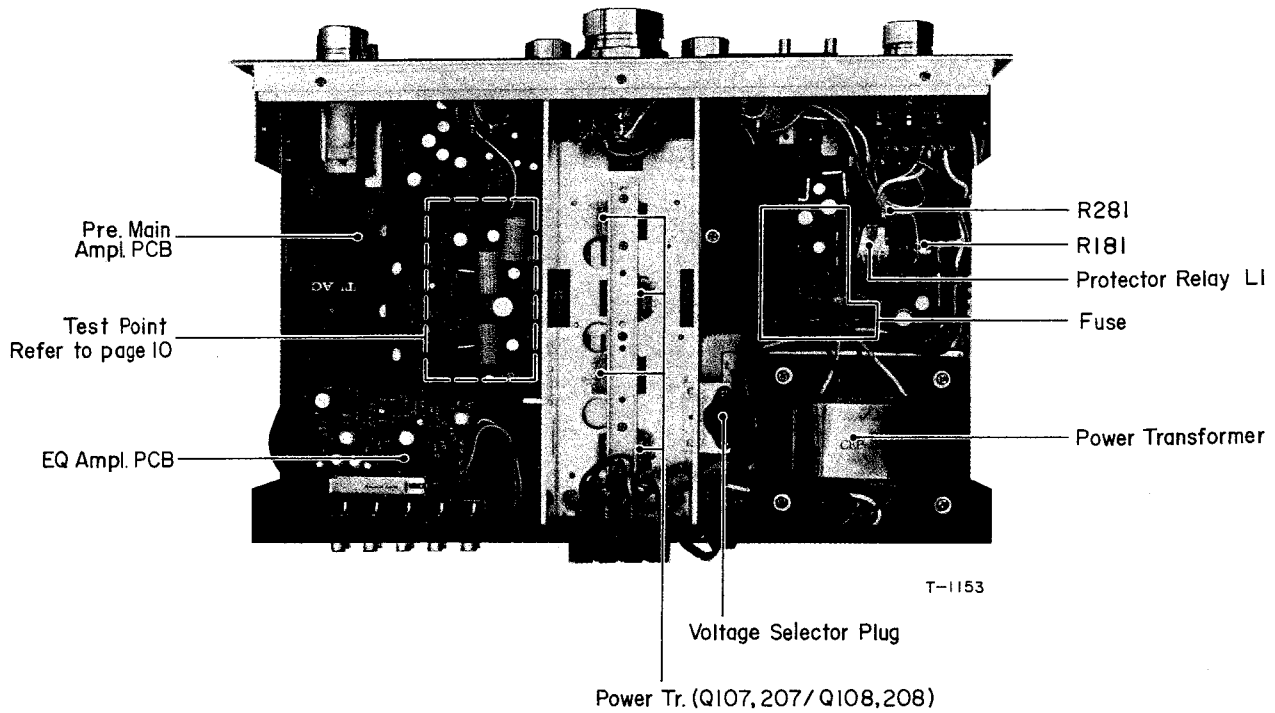


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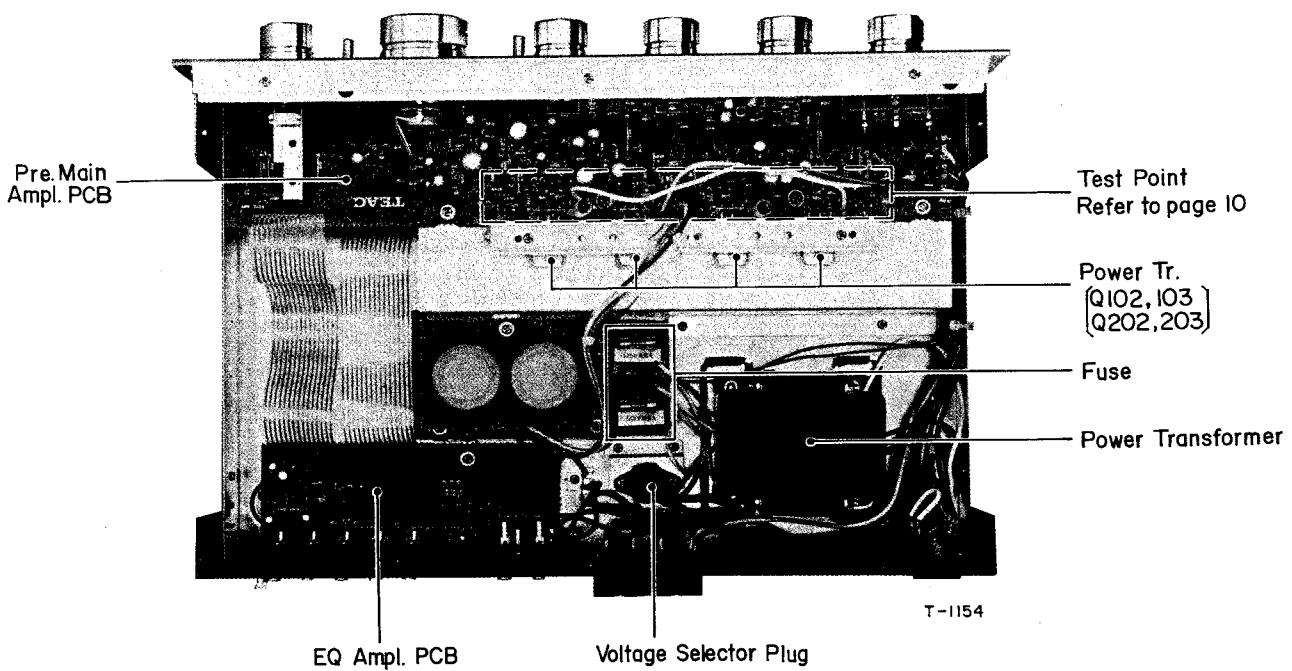


5. PARTS LOCATION

AS-M50



AS-M30



6. AS-M50/AS-M30 CHECK AND ADJUSTMENT

1. POWER LEVEL METER ADJUSTMENT (Only AS-M50)

The power level meter on this amplifier is adjusted to indicate 10W when the amplifier produces 10W output into 8 ohm/50W load. It can be readjusted as follows if it is suspected that meter indications may be abnormal.

1. Connect an Audio Generator to the AUX (or TAPE, TUNER) pin on the rear panel.
2. Connect an 8 ohm/50W dummy load and AC V.T.V.M to an open speaker terminal.
3. Apply a 1 kHz signal, and set level VOLUME Control to maximum position to get an output of 10W (8.9V).
4. If adjustment is required, adjust R181 (L-ch) and R281 (R-ch) for 10W (8.9V) position.

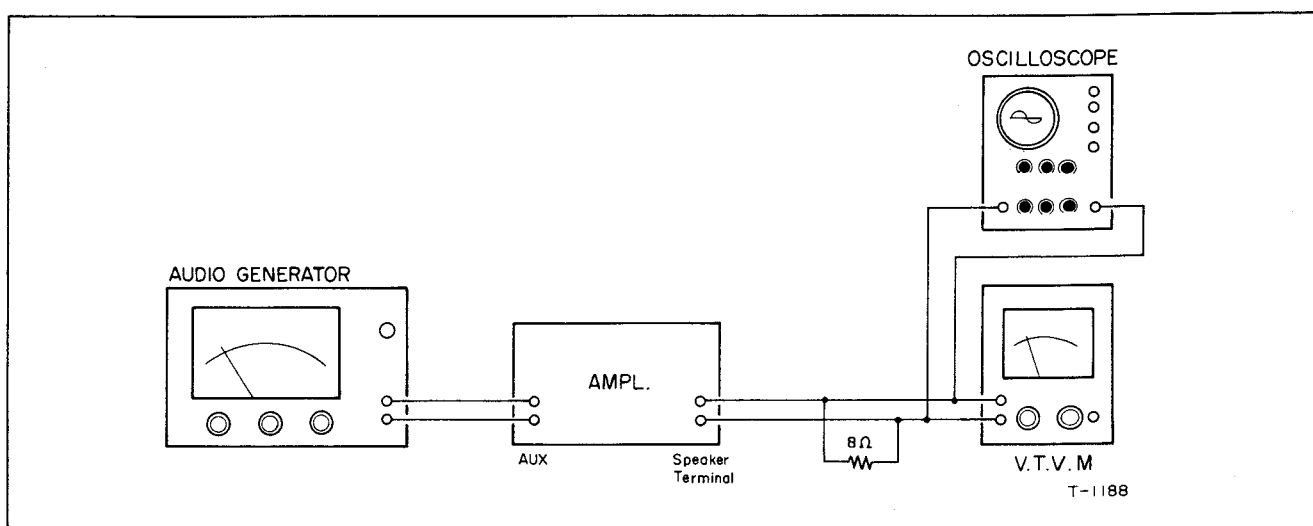


Fig. 1 Set-up

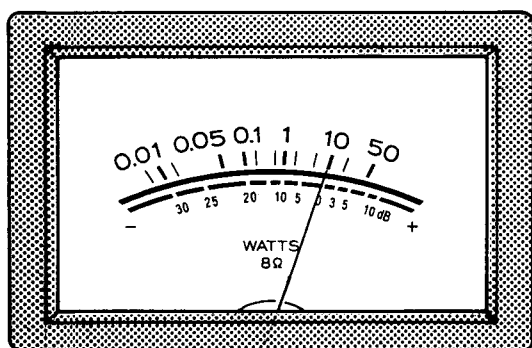


Fig. 2 Correct Output
Meter indicate (10W)

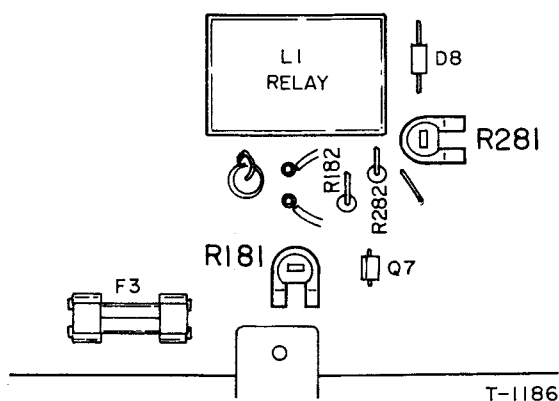


Fig. 3 Adj. Location

2. CENTER VOLTAGE CHECK

The output terminals of a direct coupled, positive-negative dual power supply type amplifier should be at "0" electrical potential in terms of DC. This voltage can be kept to within $\pm 50\text{mV}$ with an ordinary circuit design, which does not employ the aid of voltage check circuit.

Its check is made as follows;

1. Connect the volt-ohm multitester (or DC Voltmeter) to speaker terminals (on rear panel) and set the SPEAKERS SW (on front panel) to the corresponding position.
2. Set the POWER SW to ON, VR control to MIN position and apply no signal.
3. If Meter indicates over $\pm 50\text{mV}$, replace Power Transistors Q107, Q207, Q108, Q208 (Q102, Q103, Q202, Q203 for AS-M30) and repeat check again using above procedure.

NOTE: 1) If Power Transistor is replaced, be careful that transistor bracket screws are not tightened too much that the transistor bracket exerts excess pressure.
2) If the SOURCE SW or EQ AMPL. P.C. Board is replaced, make sure that wire band is not twisted or attached unnaturally but flows smoothly.

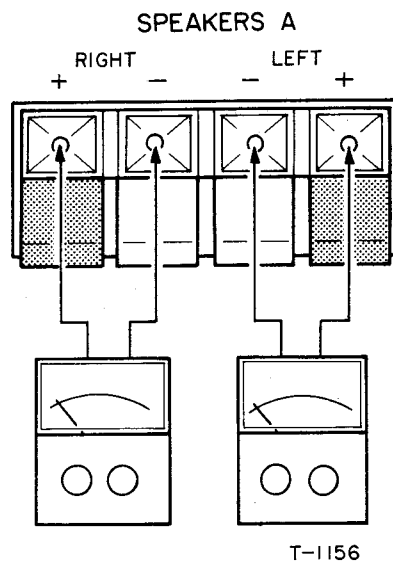


Fig. 4 Connect DC Voltmeter and Speakers Terminals

3. BIAS CURRENT CHECK AND MEASUREMENT

This amplifier is equipped with Test Points T.P. 1 and T.P. 2 as shown in Fig. 5, for bias current check.

This current is calculated from the voltage that is measured across these Test Points, as follows:

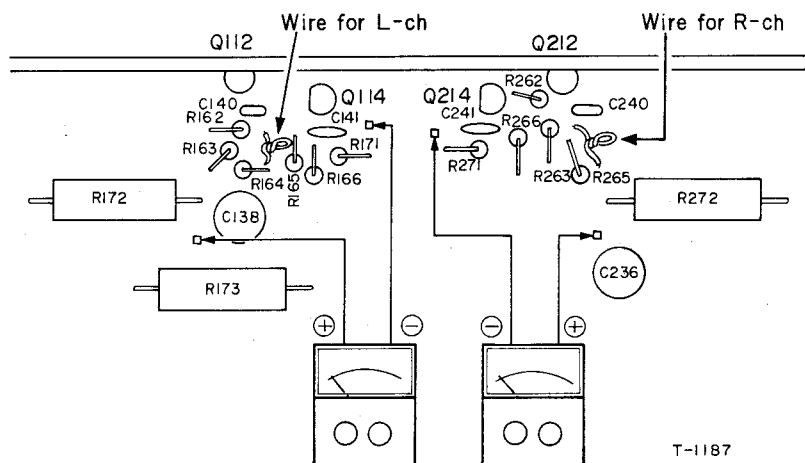
1. After the amplifier has been serviced and restored to normal, connect speakers or dummy loads to it. If there is an input signal, set the level VOLUME control to minimum position.
2. Connect a volt-ohm multitester (or DC Voltmeter) across T.P. 1 (+) and T.P. 2 (–).
3. Check that the DC voltmeter indicates 10mV (20mA), if incorrect cut red wire if installed or connect red wire if not installed on PRE. MAIN Ass'y. See location on page 5.
4. Check other channel (R-ch) in the same manner.
5. Apply signal into the amplifier to confirm that it is operating normally. In such a case, switch OFF the load (set SPEAKERS SW to OFF position) and check the center voltage first.

Bias current above is calculated as follows;

$$I = V/R$$

Where V is the voltmeter reading, and R is 0.47Ω (the resistance of the power transistor emitter resistor).

AS-M50



AS-M30

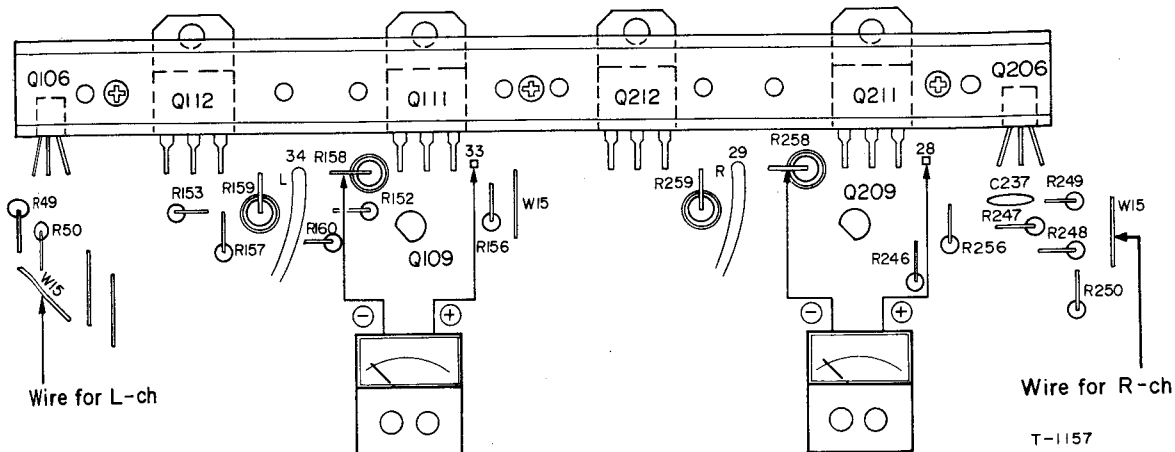
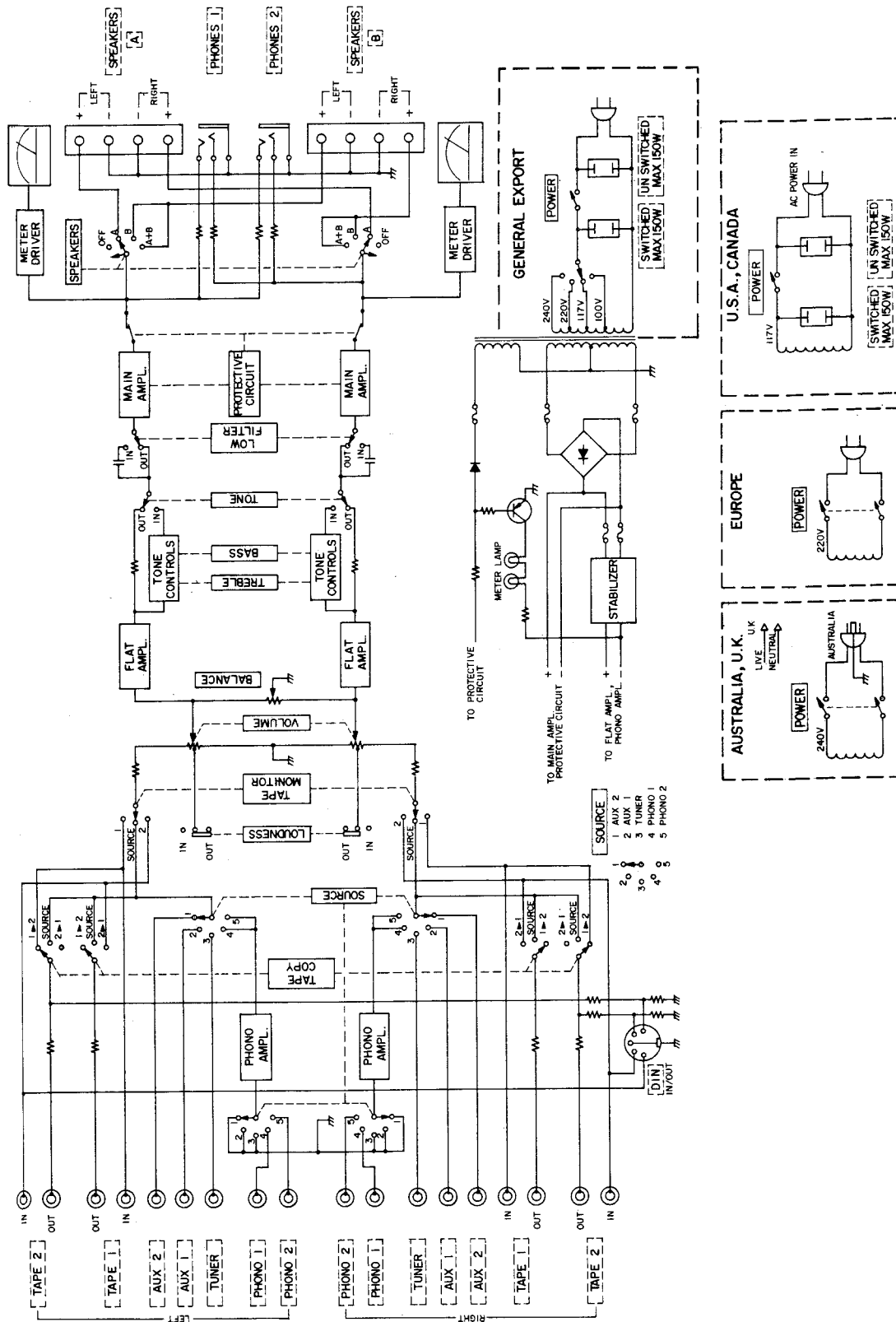


Fig. 5 Test Point

7. BLOCK DIAGRAM

AS-M50

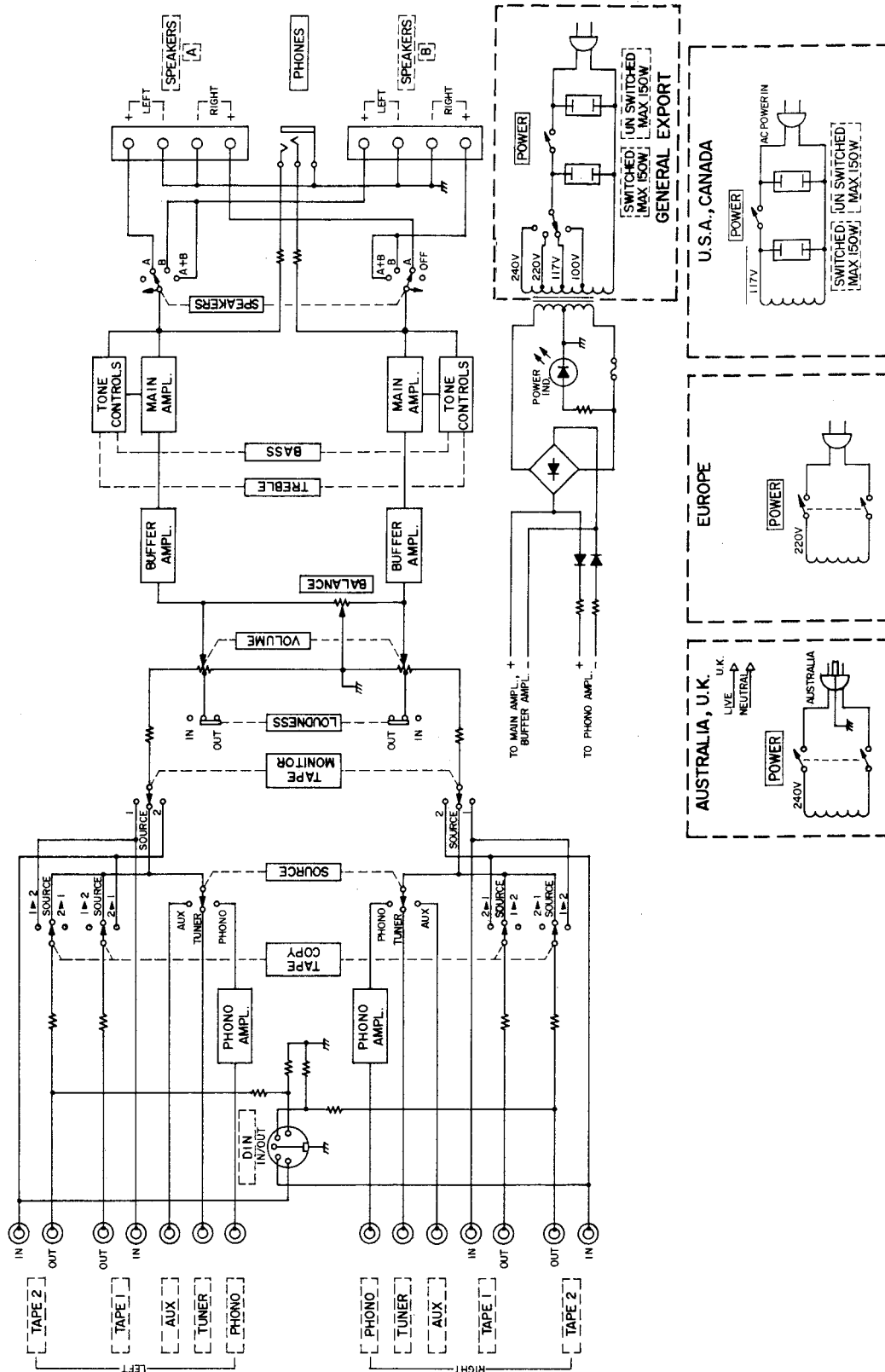
Block Diagram



BLOCK DIAGRAM

AS-M30

Block Diagram



PARTS LIST

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PARTS ORDERING INFORMATION

Spare parts are available through your nearest TEAC Authorized Service Center or directly from the TEAC office, the address of which is written on the back cover. When ordering parts, always include the following information:

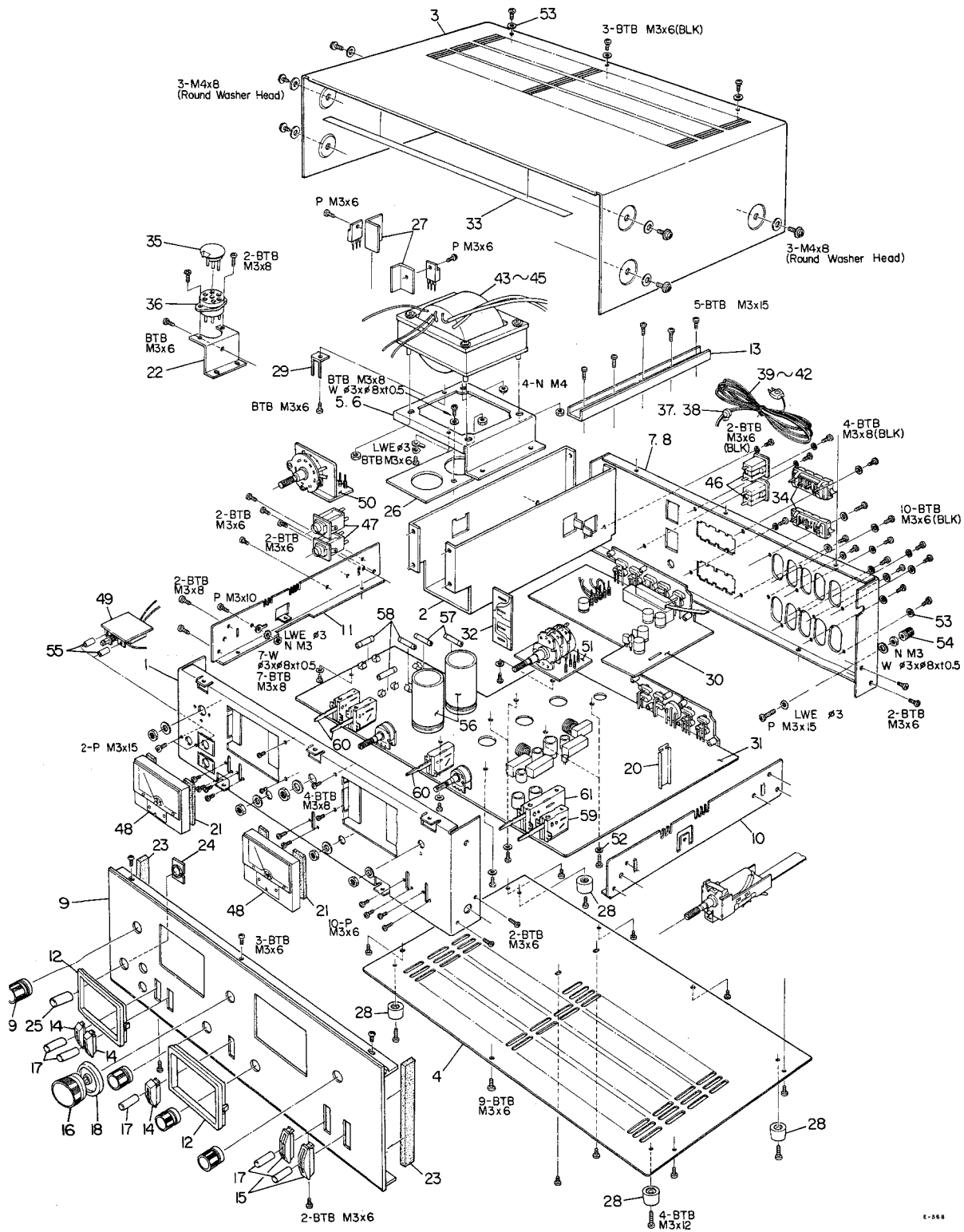
- | | |
|--------------|--------------------|
| 1. MODEL | 4. DESCRIPTION |
| 2. REF. NO. | 5. UNIT SERIAL NO. |
| 3. PARTS NO. | 6. MANUAL CODE NO. |

NOTICE REGARDING PARTS ORDERS

- 1. Do not order by only REF. NO.
- 2. In some instances, individual minor parts are not available. In such a case, the entire assembly including the part requested will be sent to you.
- 3. Parts are identical between the different models with the exceptions as coded by the designations in the REMARKS column.
- 4. PC Boards shown viewed from foil side.
- 5. Parts marked with *require longer delivery time than regular parts.
- 6. P.C. Board Assy only can be ordered. P.C. Boards cannot be ordered as they are not kept in stock.

1. AS-M50 SECTION

1-1. EXPLODED VIEW AND PARTS LIST

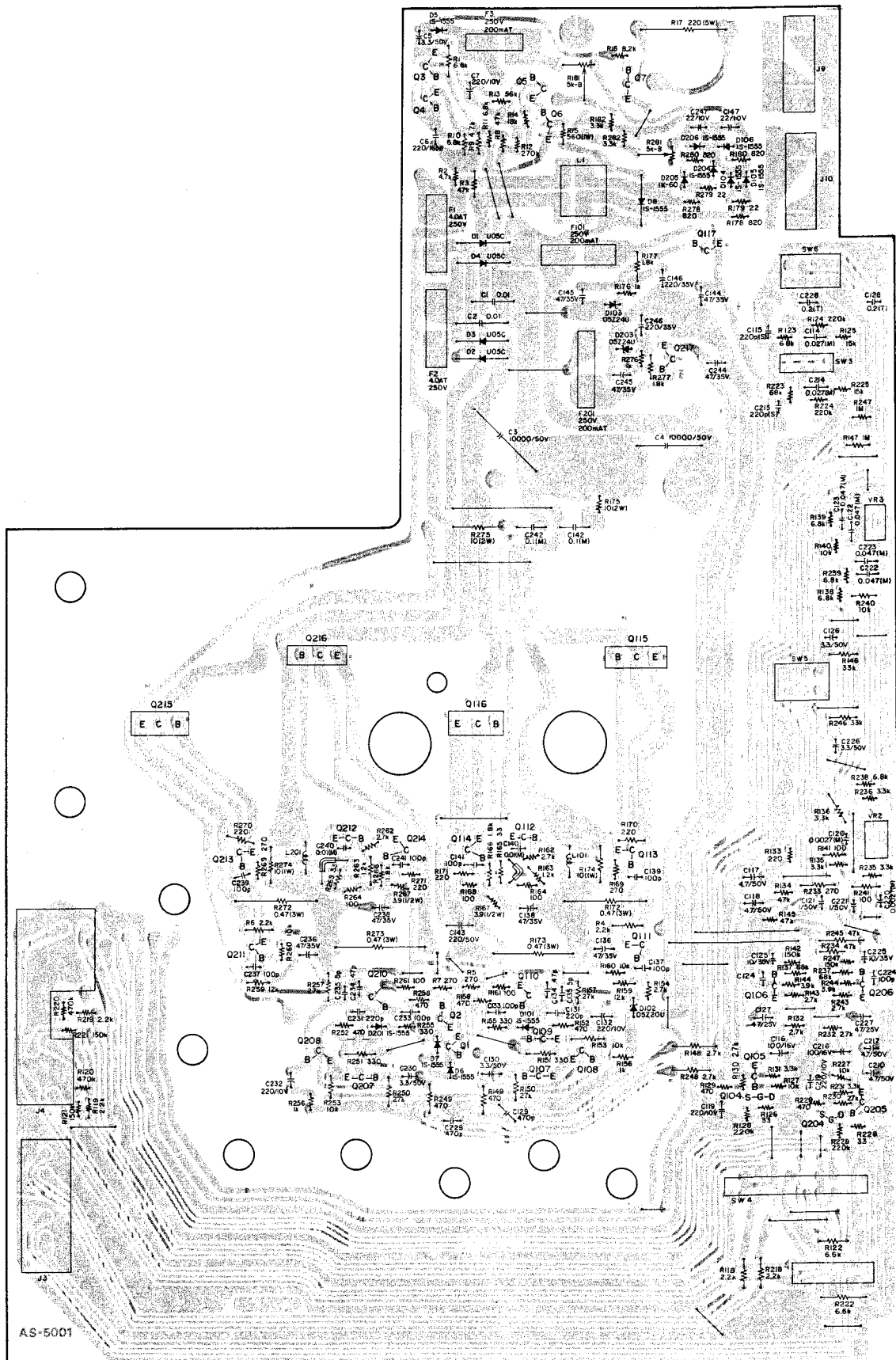


E-568

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
1	*51971000	Chassis, Front	GENERAL EXPORT EUROPE, U.K., AUSTRALIA GENERAL EXPORT EUROPE, U.K., AUSTRALIA
2	*51971010	Heat Sink	
3	*51970130	Cover, Top	
4	*51971020	Cover, Bottom	
5	*51971030	Bracket, Power Transformer	
6	*51971040	Bracket, Power Transformer (A)	
7	*51971050	Panel, Rear	
8	*51971060	Panel, Rear (A)	
9	51971070	Panel, Front	
10	*51971080	Chassis, Side; R	
11	*51971090	Chassis, Side; L	GENERAL EXPORT
12	51971100	Escutcheon, Meter	
13	*51970170	Bracket, Transistor	
14	51970060	Escutcheon, Switch; 2P	
15	51970070	Escutcheon, Switch; 3P	
16	51970020	Knob, Var. Res.; A	
17	51970040	Knob, Lever Switch	
18	51971110	Knob, BALANCE	
19	51970030	Knob, Var. Res.; B	
20	*51971120	Bracket, Reinforcement	
21	*51971130	Chushion, Meter	EUROPE, U.K., AUSTRALIA GENERAL EXPORT
22	*51970160	Bracket, Voltage Selector	
23	*51970100	Dust Seal, A	
24	*51970080	Spacer, Push Button	
25	51970050	Button, Push Switch	
26	*51971140	Holder, Capacitor	
27	*51971150	Heat Sink, M	
28	51970240	Foot	
29	*51971160	Lug, Earth; 2P	
30	51971920	PCB Assy, EQ AMPL.	
31	51971910	PCB Assy, PRE/MAIN AMPL.	GENERAL EXPORT EUROPE, U.K., AUSTRALIA GENERAL EXPORT
	51971960	PCB Assy, PRE/MAIN AMPL.	
32	51971870	PCB, AC Outlet	
33	*51970220	Chushion, Top Cover	
34	51970390	Terminal Assy, Push; 4P	
35	50432990	Plug, Voltage Selector (SW9)	
36	50435060	Socket, Voltage Selector (SW9)	
37	*51970330	Strain Relief, AC Power Cord	
38	*51970340	Strain Relief, AC Power Cord	
39	*51970290	Cord, AC Power	GENERAL EXPORT GENERAL EXPORT GENERAL EXPORT, EUROPE, U.K. AUSTRALIA GENERAL EXPORT EUROPE U.K. AUSTRALIA U.K., AUSTRALIA EUROPE GENERAL EXPORT GENERAL EXPORT
40	*51970300	Cord, AC Power	
41	*51970320	Cord, AC Power	
42	*51970310	Cord, AC Power	
43	51971170	Transformer, Power	
44	51971180	Transformer, Power	
45	51971190	Transformer, Power	
46	*51970350	Outlet, AC	
47	51970370	Jack, Headphones (J5, J6)	
48	51971200	Meter, VU (M1, M2)	
49	51971950	PCB Assy, Power Switch	GENERAL EXPORT GENERAL EXPORT, EUROPE, U.K., AUSTRALIA EUROPE, U.K., AUSTRALIA GENERAL EXPORT Part of 50 Part of 50
	51340110	Switch, Power (SW8)	
	50529080	Spark Killer, 0.047 mfd (Z1, Z2)	
	51970730	Spark Killer, 0.01 mfd (Z3)	
50	51971940	PCB Assy, SP Selector	
	50527250	Resistor, Metal Film; 180 ohm 1W (R183, R184, R283, R284)	
	51970450	Switch, Rotary (SW7)	

(Continued on Page. 26)

1. PRE. MAIN AMPL. PCB ASSY



2. EQ AMPL. PCB ASSY



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1-2. PC BOARD (Parts List)

1. PRE. MAIN AMPL. PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	51971910	PC Board Assy
	51971850	PC Board
TRANSISTORS		
Q1~Q4	51970640	2SC-1815
Q5	50423500	2SC-734
Q6	51970600	2SC-1627A
Q7	51971340	2SA509
	51971350	2SA661
Q104/Q204	51971360	F.E.T 2SK-117
Q105/Q205	51450600	2SC-841
Q106/Q206	51450600	2SC-841
Q107/Q207	51970630	2SA-640 (E), (F)
Q108/Q208	51970630	2SA-640 (E), (F)
Q109/Q209	51970640	2SC-1815
Q110/Q210	51971300	2SC-1624
Q111/Q211	51971280	2SC-2235

REF. NO.	PARTS NO.	DESCRIPTION
Q112/Q212	51970640	2SC-1815
Q113/Q213	51971280	2SC-2235
Q114/Q214	51971290	2SA-965
Q115/Q215	51971260	2SD-718
Q116/Q216	51971270	2SB-688
Q117	51450640	2SD-234
Q217	51971310	2SB-596
DIODES		
D1~D4	51430170	U05C
D5~D7	51970670	1S-1555
D8	51971370	1S-1885
D101/D201	51970670	1S-1555
D102	51971390	Zener, 05Z20U
D103/D203	51971380	Zener, 05Z24U
D104/D204	51970670	1S-1555
D105/D205	50422130	1N-60
D106/D206	51970670	1S-1555

REF. NO.	PARTS NO.	DESCRIPTION
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RESISTORS

All resistors are rated $\pm 5\%$ tolerance, $\frac{1}{4}$ watt and of carbon type unless otherwise noted.

R1	50571020	6.8 kohm
R2, R3	50570980	4.7 kohm
R4	50570900	2.2 kohm
R5	50570680	270 ohm
R6	50570900	2.2 kohm
R7	50570680	270 ohm
R8	50571220	47 kohm
R9	50570980	4.7 kohm
R10, R11	50571020	6.8 kohm
R12	50571400	270 kohm
R13	50571240	56 kohm
R14	50571120	18 kohm
R15	51846010	Metal Film, 560 ohm 1W
R16	50571040	8.2 kohm
R17	50520310	Cement, 220 ohm 5W
R118/R218	50570900	2.2 kohm
R119/R219	50570900	2.2 kohm
R120/R220	50571460	470 kohm
R121/R221	50571340	150 kohm
R122/R222	50571000	5.6 kohm
R123/R223	50571260	68 kohm
R124/R224	50571380	220 kohm
R125/R225	50571100	15 kohm
R126/R226	50570460	33 ohm
R127/R227	50571060	10 kohm
R128/R228	50571380	220 kohm
R129/R229	50570740	470 ohm
R130/R230	50570920	2.7 kohm
R131/R231	50570940	3.3 kohm
R132/R232	50570920	2.7 kohm
R133/R233	50570660	220 ohm
R134/R234	50571220	47 kohm
R135/R235	50570940	3.3 kohm
R136/R236	50570940	3.3 kohm
R137/R237	50571260	68 kohm
R138/R238	50571020	6.8 kohm
R139/R239	50571020	6.8 kohm
R140/R240	50571060	10 kohm
R141/R241	50570580	100 ohm
R142/R242	50571340	150 kohm
R143/R243	50570920	2.7 kohm
R144/R244	50570960	3.9 kohm
R145/R245	50571220	47 kohm
R146/R246	50571180	33 kohm
R147/R247	50571540	1 Mohm
R148/R248	50570920	2.7 kohm
R149/R249	50570740	470 ohm
R150/R250	50571160	27 kohm
R151/R251	50570700	330 ohm
R152/R252	50570740	470 ohm
R153/R253	50571060	10 kohm
R154	50570920	2.7 kohm
R155/R255	50570700	330 ohm
R156/R256	50570820	1 kohm
R157/R257	50571160	27 kohm
R158/R258	50570740	470 ohm
R159/R259	50571080	12 kohm

REF. NO.	PARTS NO.	DESCRIPTION
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R160/R260	50571060	10 kohm
R161/R261	50570500	100 ohm
R162/R262	50570920	2.7 kohm
R163/R263	50570840	1.2 kohm
R164/R264	50570580	100 ohm
R165/R265	50570460	33 ohm
R166/R266	50570880	1.8 kohm
R167/R267	50574960	3.9 kohm $\frac{1}{4}$ W
R168	51818480	Non-Flammable 100 ohm (EUROPE, U.K., AUSTRALIA)
R168	50570580	100 ohm (GENERAL EXPORT)
R169/R269	51818580	Non-Flammable 270 ohm (EUROPE, U.K., AUSTRALIA)
R169/R269	50570680	270 ohm
R170/R270	51818560	Non-Flammable 220 ohm (EUROPE, U.K., AUSTRALIA)
R170/R270	50570660	220 ohm
R171/R271	51818560	Non-Flammable 220 ohm (EUROPE, U.K., AUSTRALIA)
R171/R271	50570660	220 ohm
R172/R272	51971450	Cement 0.47 ohm 3W
R173/R273	51971450	Cement 0.47 ohm 3W
R174/R274	50525460	Metal Film 10 ohm 1W
R175/R275	50528100	Metal Film 10 ohm 2W
R176/R276	50570820	1 kohm
R177/R277	50570880	1.8 kohm
R178/R278	50570800	820 ohm
R179/R279	50570420	22 ohm
R180/R280	50570800	820 ohm
R182/R282	50570940	3.3 kohm

CAPACITORS

C1, C2	51970730	Ceramic	0.01 mfd	DC 1.4KV
C3, C4	51971400	Elec.	10000 mfd	50V or
	51971410	Elec.	10000 mfd	50V
C5	50555730	Elec.	3.3 mfd	50V
C6	51715070	Non-Polar	220 mfd	16V
C7	50554910	Elec.	220 mfd	10V
C114/C214	50548990	Mylar	0.027 mfd	50V
C115/C215	50592330	Polyst.	220 pfd	50V
C116/C216	50554200	Elec.	100 mfd	16V
C117/C217	50554080	Elec.	4.7 mfd	50V
C118/C218	50554080	Elec.	4.7 mfd	50V
C119/C219	50554910	Elec.	220 mfd	10V
C120/C220	50548890	Mylar	0.01 mfd	50V
C121/C221	50554540	Elec.	1 mfd	50V
C122/C222	50547380	Mylar	0.047 mfd	50V
C123/C223	50547380	Mylar	0.047 mfd	50V
C124/C224	51723120	Ceramic	100 pfd	50V
C125/C225	50554510	Elec.	10 mfd	35V
C126/C226	50555730	Elec.	3.3 mfd	50V
C127/C227	50554490	Elec.	47 mfd	25V
C128/C228	51971420	Dip. Tant.	0.2 mfd	16V
C129/C229	51723200	Ceramic	470 pfd	50V
C130/C230	50554540	Elec.	3.3 mfd	50V
C131/C231	51723160	Ceramic	220 pfd	50V
C132/C232	50554910	Elec.	220 mfd	10V
C133/C233	51723120	Ceramic	100 pfd	50V
C134/C234	51723080	Ceramic	47 pfd	50V
C135/C235	51971430	Ceramic	5 pfd	50V
C136/C236	50554580	Elec.	47 mfd	35V or 50V

2. EQ AMPL. PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
C137/C237	51723120	Ceramic 100 pfd 50V
C138/C238	50554580	Elec. 47 mfd 35V or 50V
C139/C239	51723120	Ceramic 100 pfd 50V
C140/C240	50548770	Mylar 0.01 mfd 50V
C141/C241	51723120	Ceramic 100 pfd 50V
C142/C242	50549280	Mylar 0.1 mfd 50V
C143	50554060	Elec. 220 mfd 50V
C144/C244	50554580	Elec. 47 mfd 35V or 50V
C145/C245	50554580	Elec. 47 mfd 35V or 50V
C146/C246	50554380	Elec. 220 mfd 35V
C147/C247	50554880	Elec. 22 mfd 10V or 16V

VARIABLE RESISTORS

VR2, VR3	51971220	20 kohm-B (TREBLE, BASS)
R181/R281	51500970	Semi-fixed, 5 kohm-B

MISCELLANEOUS

SW2	51970470	Switch, Lever (MONITOR)
SW3	51970480	Switch, Lever (LOUDNESS)
SW4	51970460	Switch, Lever (COPY)
SW5	51970480	Switch, Lever (TONE)
SW6	51970480	Switch, Lever (LOW FILTER)
L101/L201	51971440	Coil
L1	50611160	Relay
F1, F2	51421920	Fuse, 4.0A, T (EUROPE, U.K., AUSTRALIA)
F1, F2	51422320	Fuse, 4.0A (GENERAL EXPORT)
F3	51421820	Fuse, 200 mA, T (EUROPE, U.K., AUSTRALIA)
F3	51422200	Fuse, 0.2 A (GENERAL EXPORT)
F101/F201	51421820	Fuse, 200 mA, T (EUROPE, U.K., AUSTRALIA)
F101/F201	51422200	Fuse, 0.2 A (GENERAL EXPORT)
J3	51970560	Jack, 4P
J4	51970570	Jack, DIN and 4P
	51970400	Pin, Lapping
	51971590	Jumper
	51970660	Sheet, Insulating

REF. NO.	PARTS NO.	DESCRIPTION
	51971920	PC Board Assy
	51971860	PC Board

TRANSISTORS

Q101/Q201	51971320	2SA-970
Q102/Q202	51971330	2SC-2240
Q103/Q203	51450600	2SC-841

RESISTORS

All resistors are rated $\pm 5\%$ tolerance, $\frac{1}{4}$ watt and of carbon type unless otherwise noted.

R101/R201	50571380	220 kohm
R102/R202	50570500	47 ohm
R103/R203	50571240	56 kohm
R104/R204	50571300	100 kohm
R105/R205	50571100	15 kohm
R106	50571060	10 kohm
R107/R207	50570800	820 ohm
R108/R208	50571080	12 kohm
R109/R209	50570860	1.5 kohm
R110	50570760	560 ohm
R111/R211	50574900	2.2 kohm $\frac{1}{2}W$
R112/R212	50570580	100 ohm
R113/R213	50571300	100 kohm
R114/R214	50571020	6.8 kohm
R115/R215	50570620	150 ohm
R116/R216	50570840	1.2 kohm
R117/R217	50571380	220 kohm

CAPACITORS

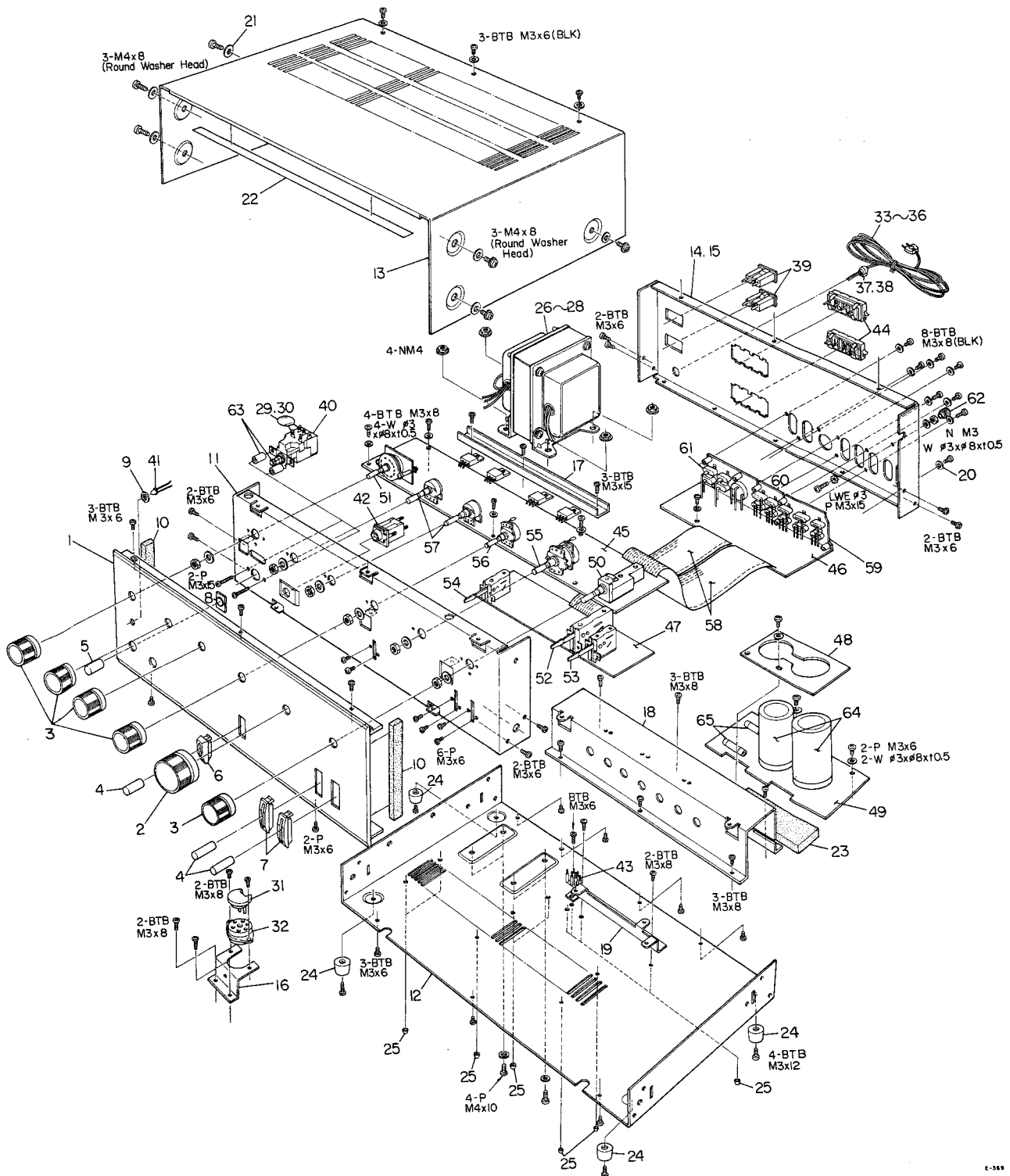
C101/C201	50555730	Elec. 3.3 mfd 50V
C102	50554490	Elec. 47 mfd 25V
C103/C203	51723040	Ceramic 22 pfd 50V
C104/C204	50548760	Mylar 0.0022 mfd 50V
C105	50554490	Elec. 3.3 mfd 50V
C106/C206	51723200	Ceramic 470 pfd 50V
C107/C207	51723020	Ceramic 15 pfd 50V
C108/C208	50554910	Elec. 220 mfd 10V
C109/C209	50548950	Mylar 0.012 mfd 50V
C110/C210	50549240	Mylar 0.039 mfd 50V
C111/C211	50554570	Elec. 100 mfd 10V
C112/C212	50554540	Elec. 1 mfd 50V
C113/C213	50548860	Mylar 0.0012 mfd 50V

MISCELLANEOUS

SW1	51971230	Switch, Source
	51970400	Pin, Lapping
J1	51970560	Jack, 4P
J2	51970550	Jack, 6P
	51971590	Jumper

2. AS-M30 SECTION

2-1. EXPLODED VIEW AND PARTS LIST

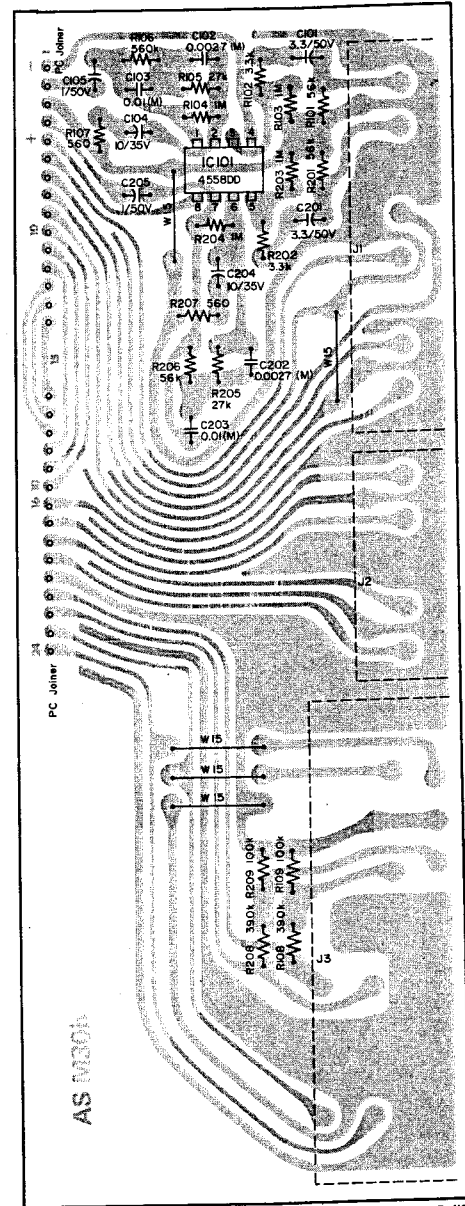
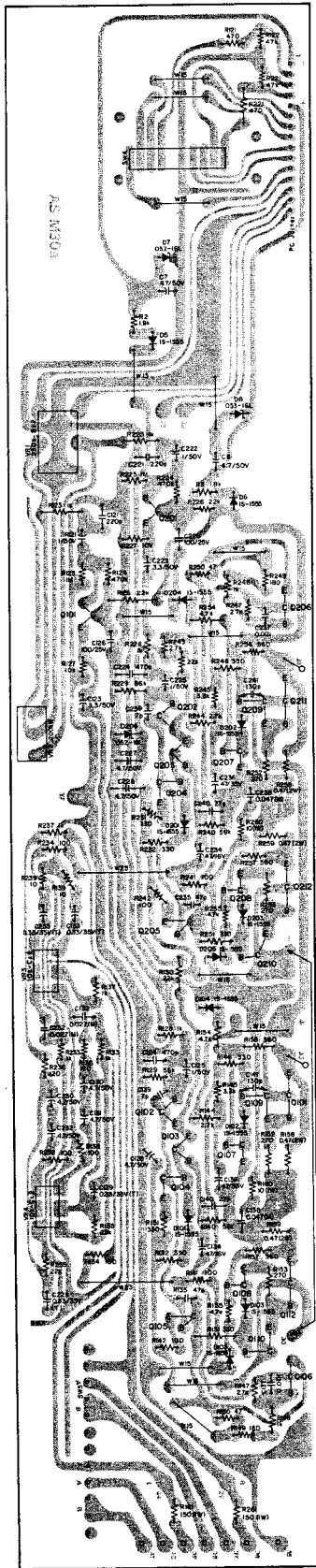


REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
1	51970010	Panel, Front	
2	51970020	Knob, Var. Res.; A	
3	51970030	Knob, Var. Res.; B	
4	51970040	Knob, Lever Switch	
5	51970050	Button, Push Switch	
6	51970060	Escutcheon, Switch; 2P	
7	51970070	Escutcheon, Switch; 3P	
8	*51970080	Spacer, Push Button	
9	*51970090	Holder, LED	
10	*51970100	Dust Seal, A	
11	*51970110	Chassis, Front	
12	*51970120	Chassis, Bottom	
13	*51970130	Cover, Top	
14	*51970140	Panel, Rear; A	U.K., AUSTRALIA, EUROPE
15	*51970150	Panel, Rear	GENERAL EXPORT
16	*51970160	Bracket, Voltage Selector	GENERAL EXPORT
17	*51970170	Bracket, Transistor	
18	*51970180	Heat Sink	
19	*51970190	Bracket, PCB	
20	*51970200	Washer, Fiber; $\phi 3 \times \phi 8 \times t 0.5$ (BLK)	
21	*51970210	Washer, Fiber; $\phi 4 \times \phi 10 \times t 0.8$ (BLK)	
22	*51970220	Cushion, Top Cover	
23	*51970230	Cushion, Power PCB	
24	51970240	Foot	
25	51970250	Cap, Screw	
26	51970260	Transformer, Power	GENERAL EXPORT
27	51970270	Transformer, Power	EUROPE
28	51970280	Transformer, Power	U.K., AUSTRALIA
29	51970730	Spark Killer, 0.01 mfd DC 1.4KV (Z1)	GENERAL EXPORT
30	50529080	Spark Killer, 0.047 mfd (Z2, Z3)	EUROPE, U.K., AUSTRALIA
31	50432990	Plug, Voltage Selector	
32	50435060	Socket, Voltage Selector	
33	*51970290	Cord, AC Power	GENERAL EXPORT
34	*51970300	Cord, AC Power	EUROPE
35	*51970310	Cord, AC Power	AUSTRALIA
36	*51970320	Cord, AC Power	U.K.
37	*51970330	Strain Relief, AC Power Cord	GENERAL EXPORT, EUROPE, U.K.
38	*51970340	Strain Relief, AC Power Cord	AUSTRALIA
39	*51970350	Outlet, AC (J7, J8)	GENERAL EXPORT
40	51340110	Switch, Power (SW6)	
41	51970360	LED (D9)	
42	51970370	Jack, Headphones (J4)	
43	*51970380	Pin, Lapping; 4P	
44	51970390	Terminal Assy, Push	
45	51971800	PCB Assy, PRE/MAIN AMPL.	
46	51971810	PCB Assy, EQ AMPL.	
47	51971820	PCB Assy, SWITCH	
48	*51971780	Holder, Capacitor	
49	51971830	PCB Assy, POWER SUPPLY	EUROPE, U.K., AUSTRALIA
	51971840	PCB Assy, POWER SUPPLY	GENERAL EXPORT
50	51970440	Switch (SW4)	Part of 45
51	51970450	Switch, Rotary (SW5)	Part of 45
52	51970460	Switch, Lever (SW1)	Part of 47
53	51970470	Switch, Lever (SW2)	Part of 47
54	51970480	Switch, Lever (SW3)	Part of 47
55	51970490	Var. Res., 250 kohm - B x 2 (VR1)	Part of 45
56	51970500	Var. Res., 200 kohm - W (VR2)	Part of 45
57	51970510	Var. Res., 10 kohm - C x 2 (VR3, VR4)	Part of 45
58	51970520	Ribbon Wire	

(Continued on Page.26)

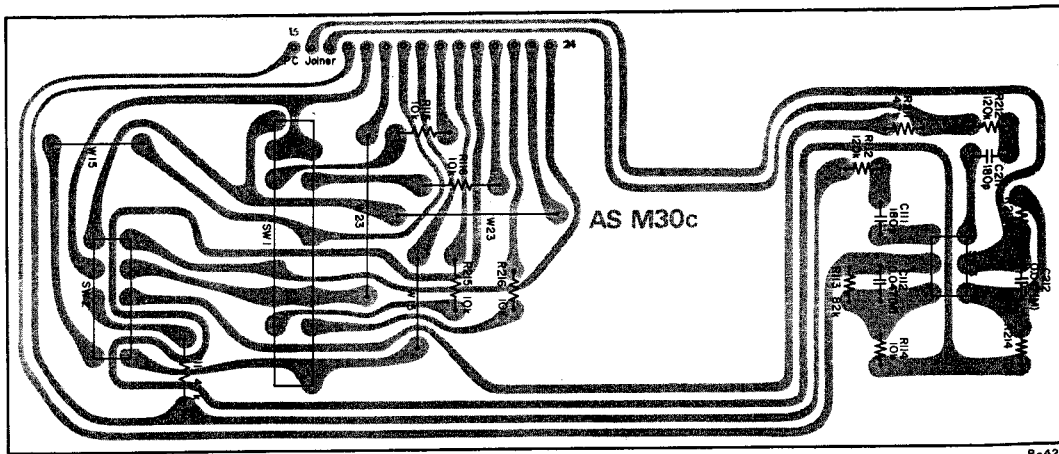
2-2. PC BOARD(Diagram)

1. PRE. MAIN AMPL. PCB ASSY

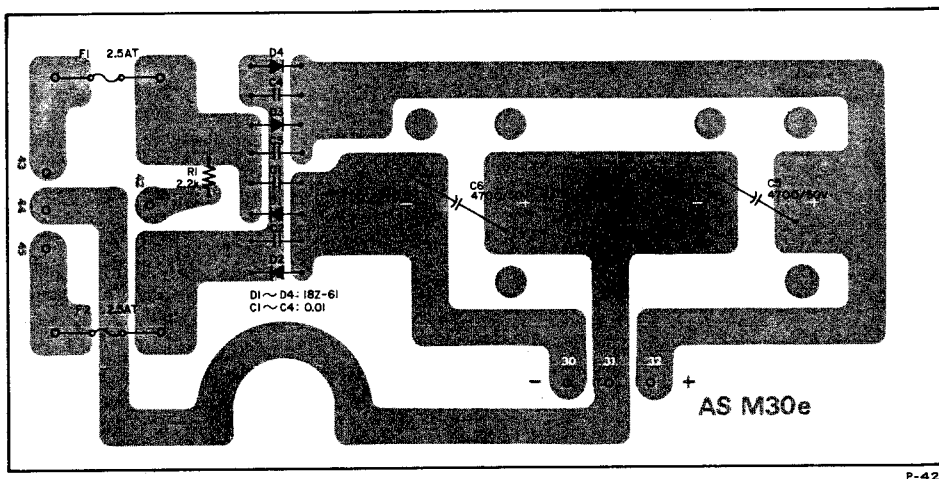


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3. SWITCH PCB ASSY



4. POWER SUPPLY PCB ASSY



2-2. PC BOARD(Parts List)

1. PRE. MAIN AMPL. PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	51971800	PC Board Assy
	51971750	PC Board
TRANSISTORS		
Q101/Q201	51970640	2SC-1815
Q102/Q202	51970630	2SA-640 (E) or (F)
Q103/Q203	51970630	2SA-640 (E) or (F)
Q104/Q204	51970640	2SC-1815
Q105/Q205	51970620	2SC-1628
Q106/Q206	51970640	2SC-1815
Q107/Q207	51970640	2SC-1815
Q108/Q208	51970650	2SA-1015
Q109/Q209	51970600	2SC-1627A
Q110/Q210	51970610	2SA-817A
Q111/Q211	51970580	2SD-716
Q112/Q212	51970590	2SB-686
DIODES		
D5, D6	51970670	1S-1555
D7, D8	51970690	05Z-16L
D101/D201	51970670	1S-1555
D102/D202	51970670	1S-1555
D103/D203	51970670	1S-1555
D104/D204	51970670	1S-1555
D105/D205	51970670	1S-1555
D206	51970680	05Z-18L
RESISTORS		
All resistors are rated $\pm 5\%$ tolerance, $\frac{1}{4}$ watt and of carbon type unless otherwise noted.		
R2, R3	50570880	1.8 kohm
R121/R221	50570740	470 ohm
R122/R222	50571220	47 kohm
R123/R223	50570820	1 kohm
R124/R224	50571460	470 kohm
R125/R225	50571540	1 Mohm
R126/R226	50571140	22 kohm
R127/R227	50571060	10 kohm
R128/R228	50570820	1 kohm
R129/R229	50571240	56 kohm
R130/R230	50571140	22 kohm
R131/R231	50570700	330 ohm
R132/R232	50570700	330 ohm
R133/R233	50570820	1 kohm
R134/R234	50570580	100 ohm
R135/R235	50571140	22 kohm
R136/R236	50570600	120 ohm
R137/R237	50570820	1 kohm
R138/R238	50570580	100 ohm
R139/R239	50570340	10 ohm
R140/R240	50571240	56 kohm
R141/R241	50570580	100 ohm
R142/R242	50570580	100 ohm
R243	50570920	2.7 kohm
R144/R244	50570920	
R145/R245	50570940	3.3 kohm
R146/R246	50570700	330 ohm

REF. NO.	PARTS NO.	DESCRIPTION
R147/R247	50570920	2.7 kohm
R148/R248	50570820	1 kohm
R149/R249	50570640	180 ohm
R150/R250	50570500	47 ohm
R151/R251	50570700	330 ohm
R152/R252	50570680	270 ohm
R153/R253	50570680	270 ohm
R154/R254	50570980	4.7 kohm
R155/R255	50570980	4.7 kohm
R156/R256	50570760	560 ohm
R157/R257	50570760	560 ohm
R158/R258	51851840	Metal Film, 0.47 ohm 2W
R159/R259	51851840	Metal Film, 0.47 ohm 2W
R160/R260	50525460	Metal Film, 10 ohm 1W
R161/R261	51845910	Metal Film, 150 ohm 1W

CAPACITORS

C7, C8	50554080	Elec.	4.7 mfd	50V
C121/C221	51723160	Ceramic	220 pfd	
C122/C222	50554540	Elec.	1 mfd	50V
C123/C223	50555730	Elec.	3.3 mfd	50V
C124/C224	51723200	Ceramic	470 pfd	
C125/C225	50554540	Elec.	1 mfd	50V
C126/C226	50554170	Elec.	100 mfd	25V
C227	50554080	Elec.	4.7 mfd	50V
C128/C228	50554080	Elec.	4.7 mfd	50V
C129/C229	50546670	Dip. Tant.	0.33 mfd	35V
C130/C230	50554080	Elec.	4.7 mfd	50V
C131/C231	50554080	Elec.	4.7 mfd	50V
C132/C232	50548990	Mylar	0.027 mfd	
C133/C233	50546670	Dip. Tant.	0.33 mfd	35V
C134/C234	50554010	Elec.	47 mfd	16V
C135/C235	51723080	Ceramic	47 pfd	
C136/C236	50554520	Elec.	47 mfd	35V
C137/C237	51723240	Ceramic	0.001 mfd	
C138/C238	50548990	Mylar	0.047 mfd	
C139/C239	51970720	Ceramic	7 pfd	
C140/C240	51723050	Ceramic	27 pfd	
C141/C241	50593280	Polyst.	130 pfd	

VARIABLE RESISTORS

VR1	51970490	250 kohm B x 2, VOLUME
VR2	51970500	200 kohm W, BALANCE
VR3	51970510	10 kohm C, TREBLE
VR4	51970510	10 kohm C, BASS

MISCELLANEOUS

SW4	51970440	Switch, SOURCE
SW5	51970450	Switch, SPEAKERS
	51970400	Pin, Lapping
	51970410	Jumper
	51970420	Jumper
	51970660	Sheet, Insulating

2. EQ AMPL. PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	51971810	PC Board Assy
	51971760	PC Board
	IC	
IC101	51470280	4558
CARBON RESISTORS		
All resistors are rated $\pm 5\%$ tolerance and $\frac{1}{4}$ watt.		
R101/R201	50571240	56 kohm
R102/R202	50570940	3.3 kohm
R103/R203	50571540	1 Mohm
R104/R204	50571540	1 Mohm
R105/R205	50571160	27 kohm
R106/R206	50571480	560 kohm
R107/R207	50570760	560 ohm
R108/R208	50571440	390 kohm
R109/R209	50591300	100 kohm
CAPACITORS		
C101/C201	50555730	Elec. 3.3 mfd 50V
C102/C202	50548890	Mylar 0.0027 mfd
C103/C203	50548770	Mylar 0.01 mfd
C104/C204	50554510	Elec. 10 mfd 35V
C105/C205	50554540	Elec. 1 mfd 50V
MISCELLANEOUS		
J1	51970550	Jack, 6P
J2	51970560	Jack, 4P
J3	51970570	Jack, DIN and 4P
	51970410	Jumper

3. SWITCH PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	51971820	PC Board Assy
	51971770	PC Board
R111/R211	50570980	Carbon Res., 4.7 kohm $\pm 5\%$ $\frac{1}{4}W$
R112/R212	50571320	Carbon Res., 120 kohm $\pm 5\%$ $\frac{1}{4}W$
R113/R213	50571280	Carbon Res., 82 kohm $\pm 5\%$ $\frac{1}{4}W$
R114/R214	50571060	Carbon Res., 10 kohm $\pm 5\%$ $\frac{1}{4}W$
R115/R215	50571060	Carbon Res., 10 kohm $\pm 5\%$ $\frac{1}{4}W$
R116/R216	50571060	Carbon Res., 10 kohm $\pm 5\%$ $\frac{1}{4}W$
C111/C211	51723150	Ceramic Cap., 180 pfd
C112/C212	50547380	Mylar Cap., 0.047 mfd
SW1	51970460	Switch, Lever
SW2	51970470	Switch, Lever
SW3	51970480	Switch, Lever
	51970410	Jumper
	51970420	Jumper

4. POWER SUPPLY PCB ASSY

REF. NO.	PARTS NO.	DESCRIPTION
	51971830	PC Board Assy (EUROPE, U.K. AUSTRALIA)
	51971840	PC Board Assy (GENERAL EXPORT)
	51971790	PC Board
R1	50570900	Carbon Res., 2.2 kohm
C1~C4	51723360	Ceramic Cap., 0.01 mfd
C5, C6	51470710	Elec. Cap., 4700 mfd 50V
D1~D4	51970700	Diodes, 1BZ-61
F1, F2	51421900	Fuse, 2.5A T (EUROPE, U.K., AUSTRALIA)
F1, F2	51422320	Fuse, 4.0A (GENERAL EXPORT)
	51970540	Holder, Fuse
	51970400	Pin, Lapping

(Continued from Page.15)

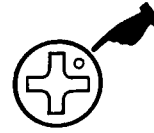
REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
51	51971930	PCB Assy, VOLUME	Part of 51
	51971210	Var. Res., 250 kohm-B x 2 (VR1)	
52	51970200	Washer, Fiber; $\phi 3 \times \phi 8 \times t0.5$ (BLK)	
53	51970210	Washer, Fiber; $\phi 4 \times \phi 10 \times t0.8$ (BLK)	
54	*51970760	Nut, GND; M3	
55	*51970770	Spacer	EUROPE, U.K., AUSTRALIA GENERAL EXPORT EUROPE, U.K., AUSTRALIA GENERAL EXPORT Part of 31 Part of 31 Part of 31
56	51971400	Capacitor, Elec. 10000 mfd 50V	
57	51421920	Fuse, 4.0A T (F1, F2)	
	51422320	Fuse, 4.0A (F1, F2)	
58	51421820	Fuse, 200mA T (F3, F101, F201)	
	51422220	Fuse, 0.2A (F3, F101, F201)	
59	51970470	Switch, Lever (SW2)	
60	51970480	Switch, Lever (SW3, SW5, SW6)	
61	51970460	Switch, Lever (SW4)	

(Continued from Page.21)

REF. NO.	PARTS NO.	DESCRIPTION	REMARKS
59	51970550	Terminal Assy, Input; 6P (J1)	Part of 46
60	51970560	Terminal Assy, Input; 4P (J2)	Part of 46
61	51970570	Terminal Assy, Input w/DIN (J3)	Part of 46
62	*51970760	Nut, GND; M3	EUROPE, U.K., AUSTRALIA GENERAL EXPORT
63	*51970770	Spacer	
64	51470710	Capacitor, Elec. 4700 mfd 50V	
65	51421920	Fuse, 4.0A T (F1, F2)	
	51422320	Fuse, 4.0A (F1, F2)	

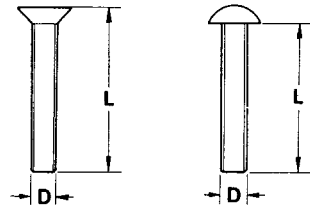
3. ASSEMBLING HARDWARE CODING LIST

All screws conform to ISO standards, and have crossrecessed heads, unless otherwise noted.
ISO screws have the head inscribed with a point as in the figure to the right.



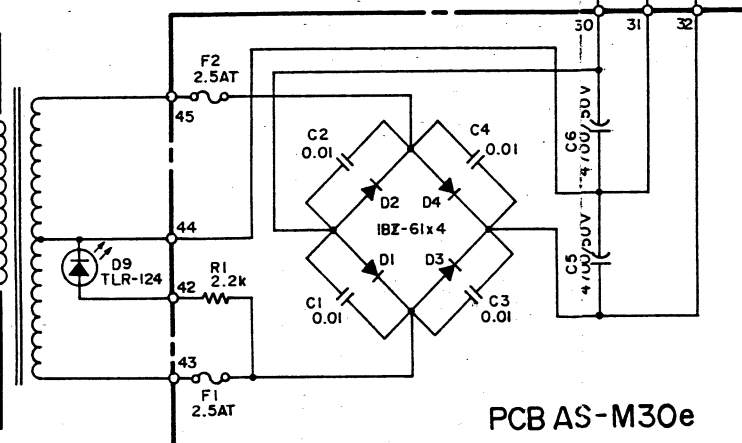
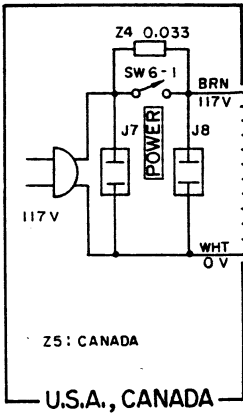
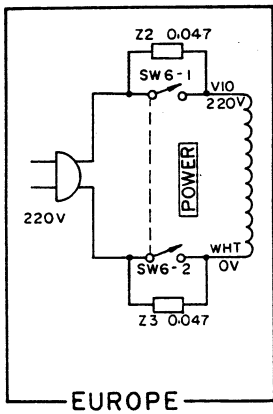
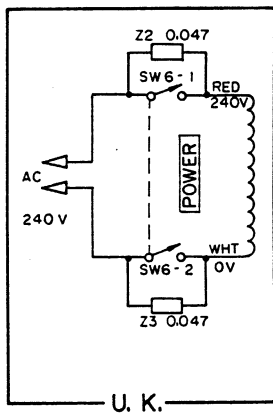
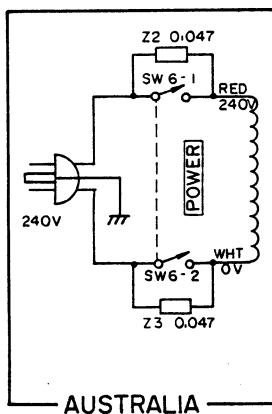
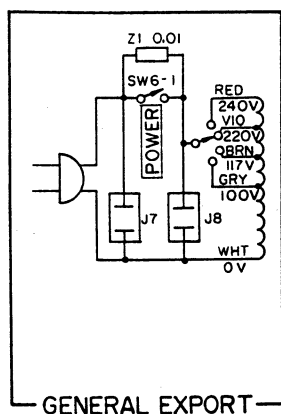
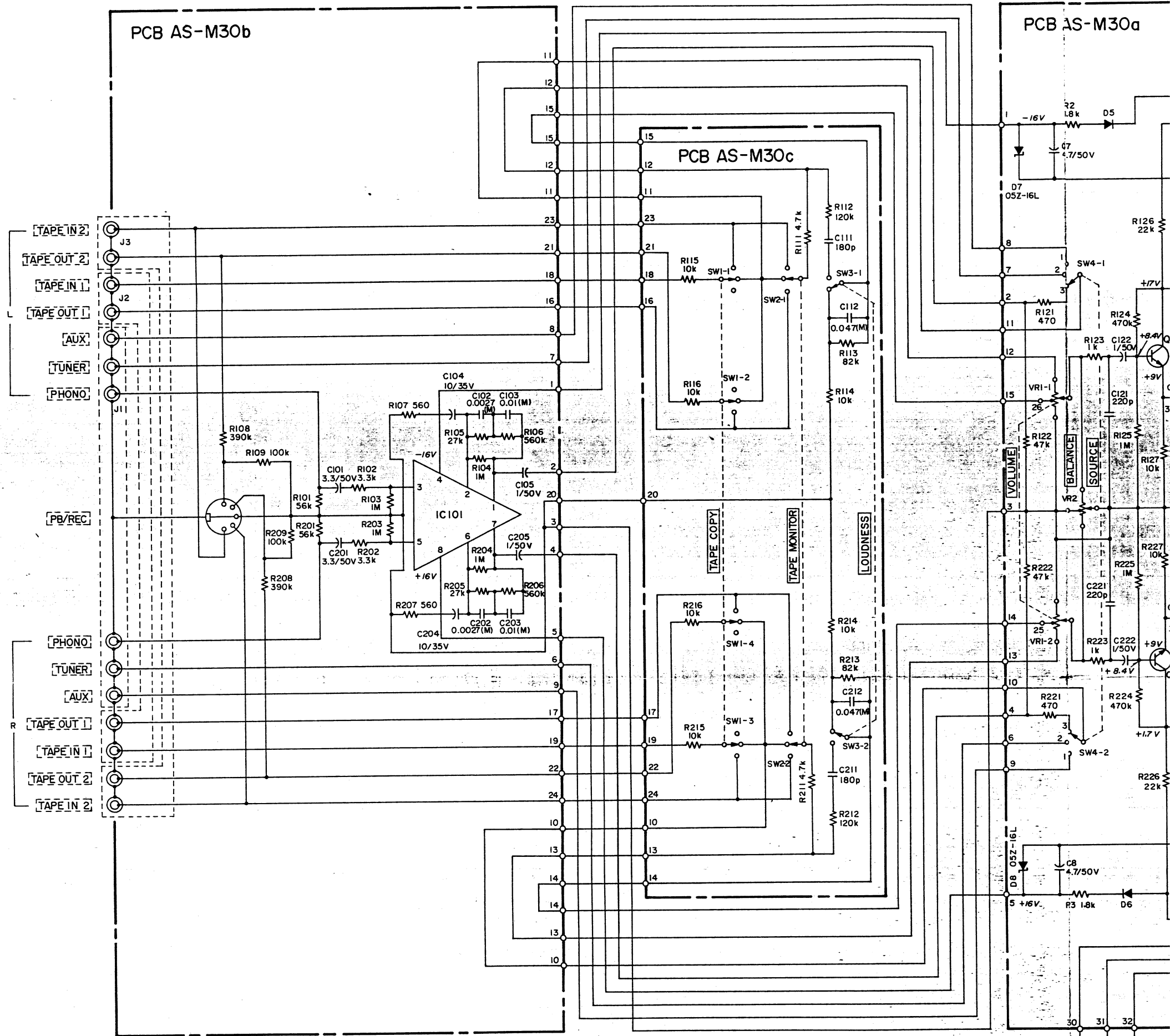
FOR EXAMPLE:

B M 3 x 6
 ----- Length in mm (L)
 ----- Diameter in mm (D) *
 ----- Metric System
 ----- Nomenclature

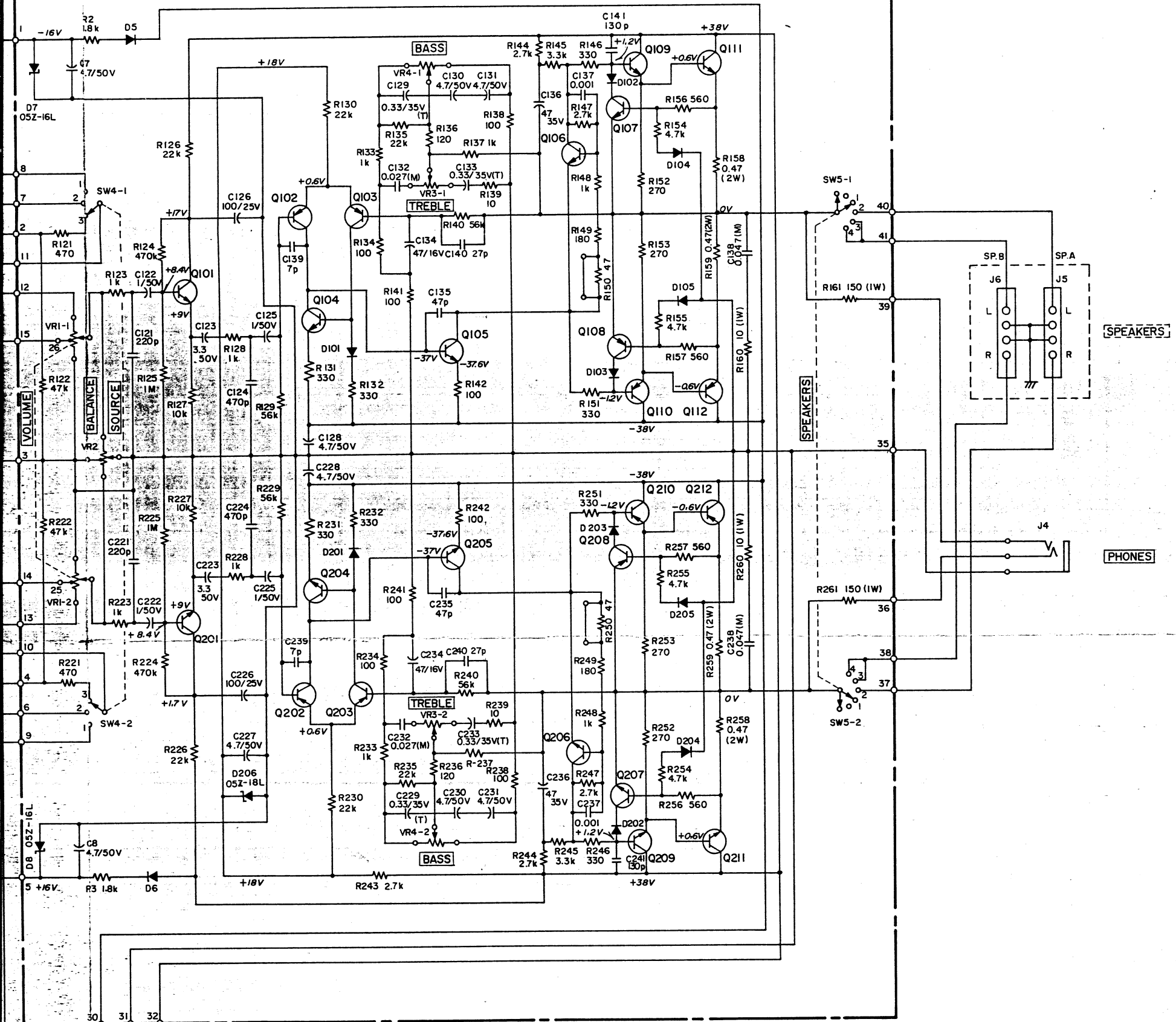


* Inner dia. for washers and nuts

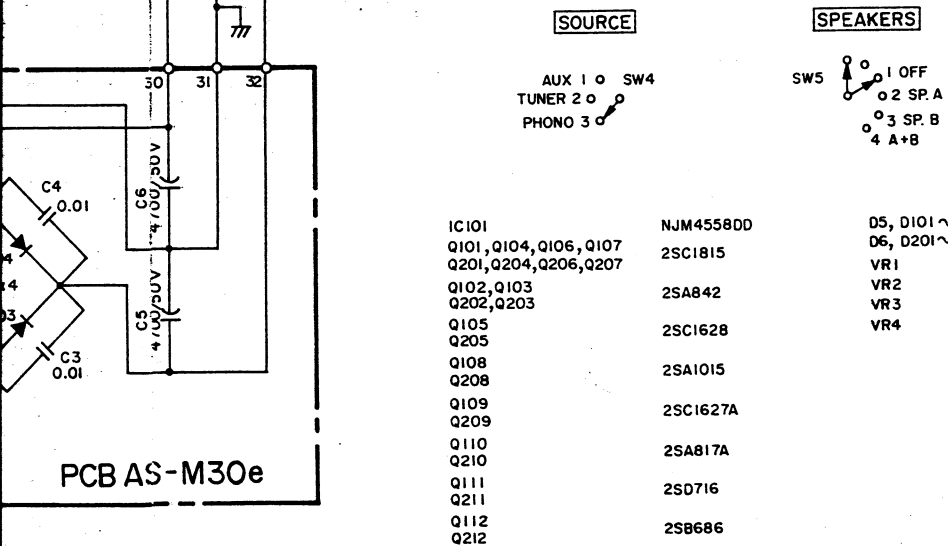
	Code	Name	Type		Code	Name	Type
MACHINE SCREW	R	Round Head Screw		TAPPING SCREW	BTA	Binding Head Tapping Screw(A Type)	
	P	Pan Head Screw			BTB	Binding Head Tapping Screw(B Type)	
	T	Stove Head Screw (Truss)			RTA	Round Head Tapping Screw(A Type)	
	B	Binding Head Screw			RTB	Round Head Tapping Screw(B Type)	
	F	Flat Countersunk Head Screw		SETSCREW	SF	Hex Socket Setscrew(Flat Point)	
	O	Oval Countersunk Head Screw			SC	Hex Socket Setscrew(Cup Point)	
WOOD SCREW	RW	Round Head Wood Screw			SS	Slotted Socket Setscrew(Flat Point)	
	FW	Flat Countersunk Wood Screw		WASHER	E	E-Ring (Retaining Washer)	
	OW	Oval Countersunk Wood Screw			W	Flat Washer (Plain)	
SEMS SCREW	BSA	Binding Head SEMS Screw(A Type)			SW	Lock Washer (Spring)	
	BSB	Binding Head SEMS Screw(B Type)			LWI	Lock Washer (Internal Teeth)	
	BSF	Binding Head SEMS Screw(F Type)			LWE	Lock Washer (External Teeth)	
	PSA	Pan Head SEMS Screw(A Type)			TW	Trim Washer (Countersunk)	
	PSB	Pan Head SEMS Screw(B Type)		NUT	N	Hex Nut	



PCB AS-M30a



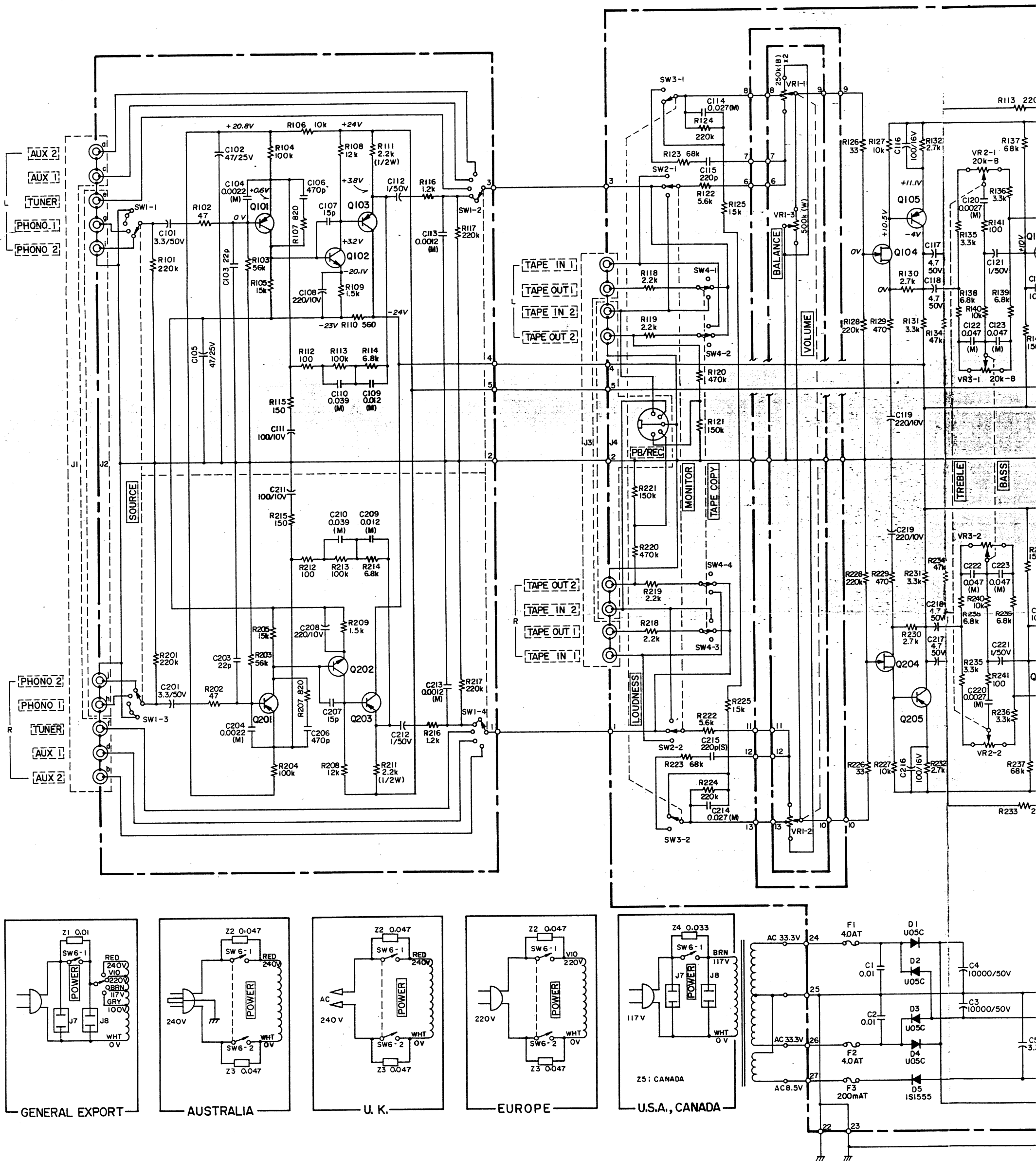
PCB AS-M30e

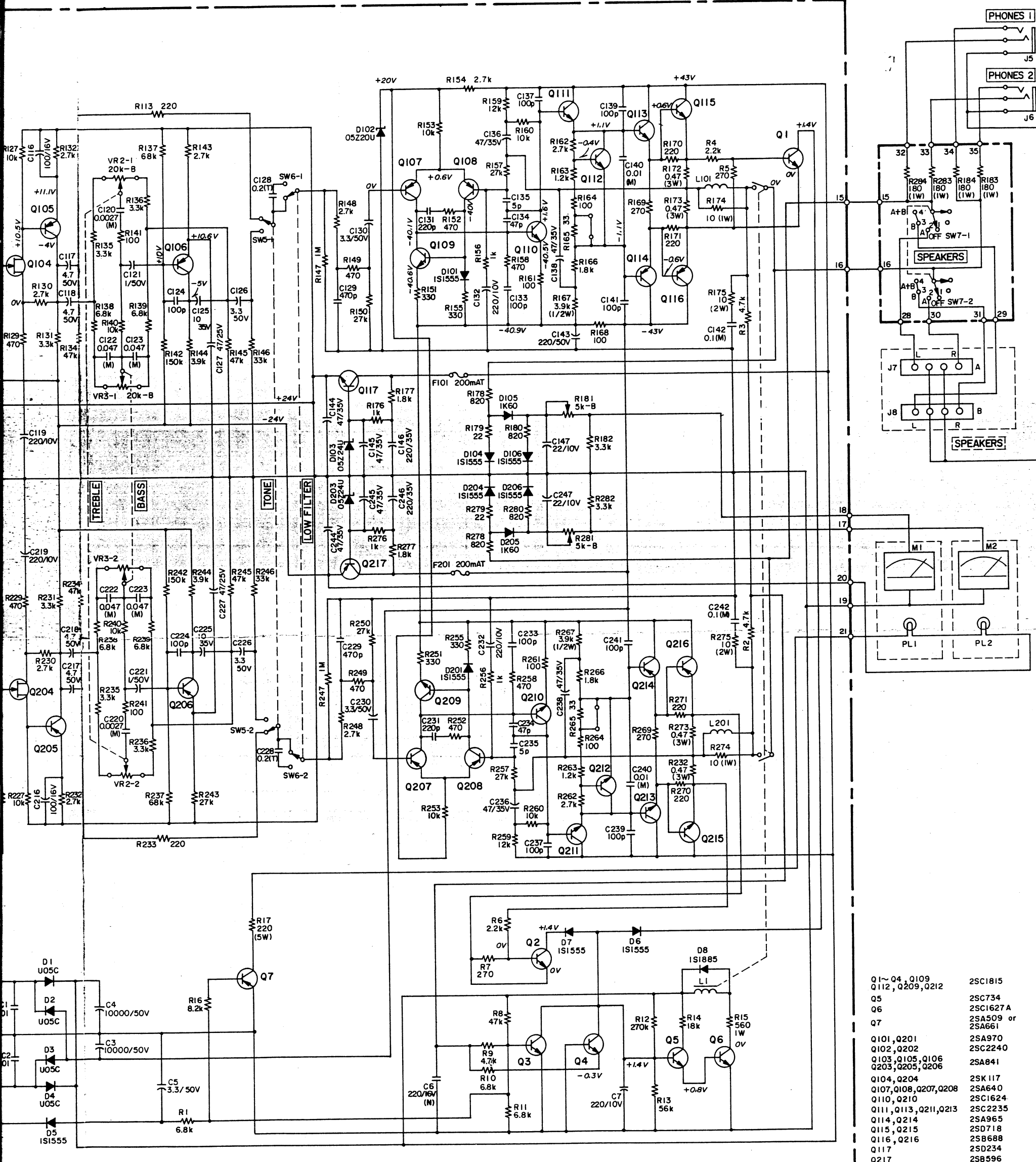


NOTES

- ALL RESISTORS ARE 1/2 WATT, 5%, UNLESS MARKED OTHERWISE. RESISTOR VALUES ARE IN OHMS (K=1,000 OHMS, M=1,000,000 OHMS).
- ALL CAPACITOR VALUES ARE IN MICROFARADS (P=PICOFARADS).

S-216			Stereo Integrated Amplifier	
			MODEL NO.	SHEET NO.
			AS-M30	
			TEAC CORPORATION	
REVISION	DATE	CHANGE NO.		
1	06-78			





- | | |
|------------------------|------------------|
| Q1-Q4, Q109 | 2SC1815 |
| Q112, Q209, Q212 | |
| Q5 | 2SC734 |
| Q6 | 2SC1627A |
| Q7 | 2SA509 or 2SA661 |
| Q101, Q201 | 2SA970 |
| Q102, Q202 | 2SC2240 |
| Q103, Q105, Q106 | |
| Q203, Q205, Q206 | 2SA841 |
| Q104, Q204 | 2SK117 |
| Q107, Q108, Q207, Q208 | 2SA640 |
| Q110, Q210 | 2SC1624 |
| Q111, Q113, Q211, Q213 | 2SC2235 |
| Q114, Q214 | 2SA965 |
| Q115, Q215 | 2SD718 |
| Q116, Q216 | 2SB688 |
| Q117 | 2SD234 |
| Q217 | 2SB596 |